TEST AND EVALUATION MASTER PLAN (TEMP)

FOR

TRANSPORTATION COORDINATORS' - AUTOMATED INFORMATION FOR MOVEMENT SYSTEM II TC-AIMS II BLOCK 3

Program Executive Office
Enterprise Information Systems
(PEO EIS)

D R A F T

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TEST AND EVALUATION MASTER PLAN
FOR
TRANSPORTATION COORDINATORS' AUTOMATED INFORMATION FOR MOVEMENT SYSTEM II (TC-AIMS II)
BLOCK 3

PROGRAM ELEMENTS

OMA - 432612

OPA - 528995

RDTE 655013

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PART 1. SYSTEM INTRODUCTION

1.1 MISSION DESCRIPTION

The Transportation Coordinators'-Automated Information for Movement System II (TC-AIMS II) is a top-down directed program that addresses critical shortfalls in moving cargo and people in support of the Department of Defense (DoD) mission. TC-AIMS II is an Office of the Secretary of Defense (OSD) directed joint program designed to address joint interoperability among the Services and Agencies for the deployment and transportation of materiel and personnel in support of Department of Defense (DoD) operations.

The Army is designated as Lead Service and is responsible for software development, initial training, and life cycle maintenance for the system. The individual Services and Agencies are responsible for hardware procurement. The Commander, U.S. Joint Forces Command is the functional proponent for TC-AIMS II, chairs the TC-AIMS II Joint Requirements Board (JRB) and represents the user community to the acquisition milestone decision authority. Force structure changes within DoD have created a need for more rapid and effective force projection to accomplish United States defense objectives. To achieve these objectives, the Department must rely on Information Technology (IT) systems to reduce the time required to move and track (via ITV) Joint Forces. TC-AIMS II will facilitate interoperability among the Services and Agencies by providing the IT system that enables the Joint Deployment Process. TC-AIMS II Block 3 will provide the capability to register, manage and track theater movements and will continue to provide users the ability to source Time Phased Force Deployment Data in support of OPLANS and contingency operations. TC-AIMS II provides greater capability than any single service or agency IT system to meet the unit movement and transportation IT requirements of the Combatant Commander in peace and during war.

TC-AIMS II Block 3, will incorporate, enhance, and extend the Theater Movement Management functions presently found in the Transportation Information Systems – Theater Operations (TIS-TO), formerly the Department of the Army Movement Management System -Revised (DAMMS-R). TC-AIMS II Block 3 will encompass theater movements, movement control, convoy operations, management and control of organic and common user transportation assets, and will interface to specific external systems unique to Joint Reception, Staging, Onward Movement, and Integration (JRSOI) environment, convoy operations, or to specific theaters. Block 3 will also increase joint interoperability beyond Unit Movement and allow management of common user-land transportation assets. Concentrating on deployment related transportation management functions Block 3 will extend transportation planning and execution capability forward from the Port of Debarkation to the Tactical Assembly Area (TAA) in theater completing the Unit Movement.

This Test and Evaluation Master Plan (TEMP) focuses on the Test and Evaluation (T&E) of TC-AIMS II Block 3, JRSOI. Block 3 functionality and minimum configurations for Operational Testing (OT) are in Attachments 1 and 2. The Acquisition Decision Memorandum (ADM) dated May 04 approved the Milestone B decision for TC-AIMS II Block 3 development.

1.2 SYSTEM THREAT ASSESSMENT

The battlefield threats to TC-AIMS II Block 3 include physical damage and destruction, computer network attack and computer network exploitation, electronic warfare (EW), directed energy weapons and nuclear weapons, and their electromagnetic pulse effects. It is possible that a threat force could detect, locate, and target TC-AIMS II from the radio frequency emissions of supporting communications, or from the low power emissions of RF tags and interrogators, to include the emissions of integrated or collocated, interfacing movement tracking systems. Radio frequency weapons can degrade, damage, or destroy critical command, control, and communications systems, computers, and automated information systems. Other threats to the TC-AIMS II system may be computer network attack and computer network exploitation that could include malicious code insertion, remote insertion of false data, internet protocol spoofing, unauthorized computer access, interference or tampering with cable communications, direct signal attack, and indirect signal attack. TC-AIMS II was initially accredited in April 2002 and was accredited to operate in the TIS enterprise environment in January 2004.

1.3 SYSTEM DESCRIPTION

TC-AIMS II Block 3 will provide an automated transportation planning and execution capability for JRSOI operations within the theater of operations, and enhance related convoy operations. Block 3 will be employed by theater movements control activities to include movement control teams (MCTs), in-theater movements managers, trans-shippers, and mode operators. Block 3 will be used in forward deployed remote locations including ports, beaches, airfields, and traffic nodes operating on existing information infrastructure networks. Expeditionary (previously known as stand-alone and/or break-away) configurations may be implemented to support occasions where communications are not available.

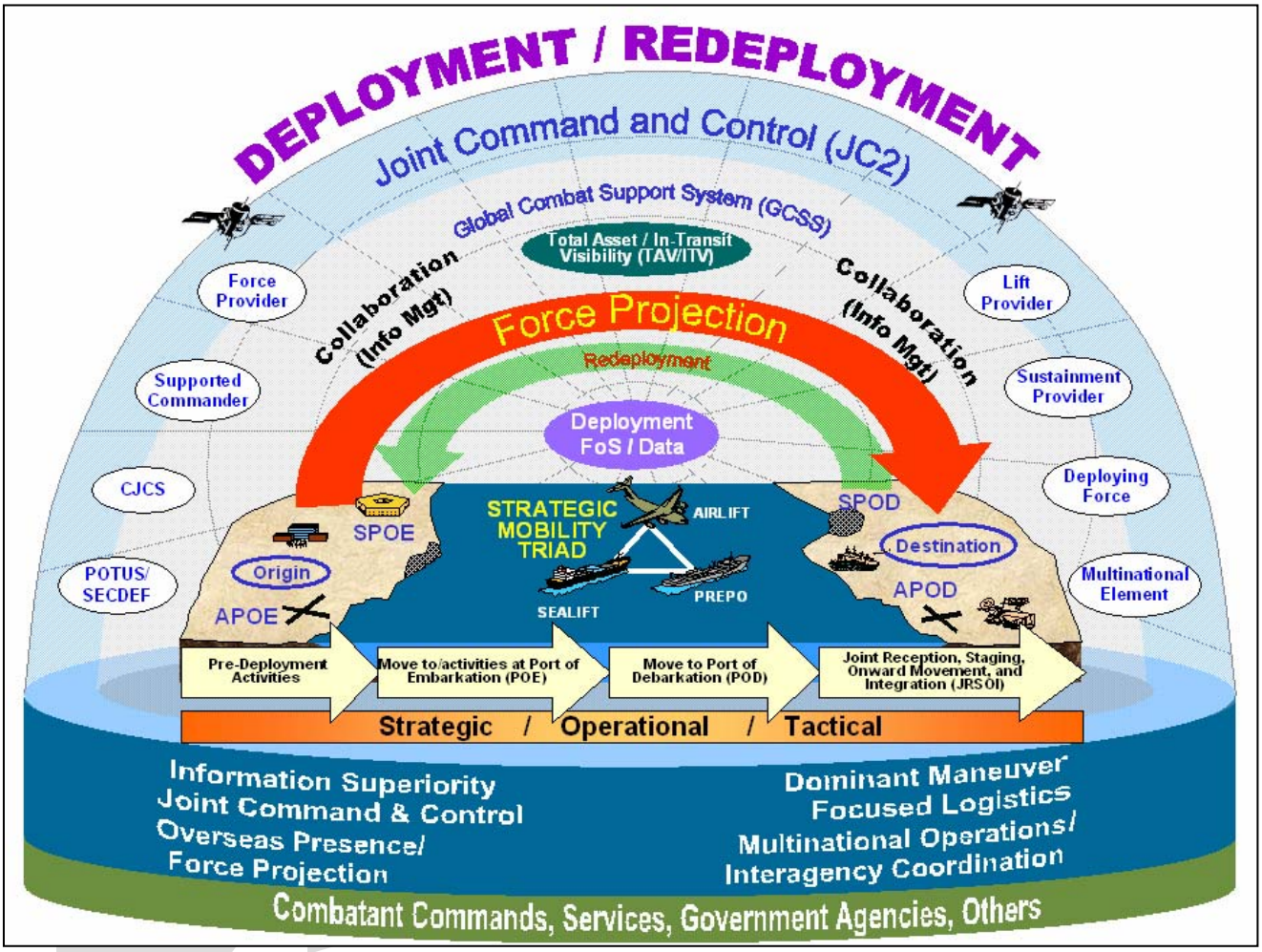

Figure 1-3: TC-AIMS II CDD OV-1

1.3.1 Key Features and Subsystems

Block 3 will provide JRSOI capability including a mix of functions to support Common User Land Transportation (CULT) procedures, movement control, mode operations, and convoy operations for onward movement requirements in a theater of operations. The following are key features of the Block 3 system:

1. The TC-AIMS II Block 3 architecture will continue to support enterprise, client/server and expeditionary operations. The user will be provided the capability to tailor the configuration to accommodate specific needs and to operate within hardware limitations and with varying communication infrastructures.
2. TC-AIMS II Block 3 will consist of multiple Computer Software Configuration Items (CSCIs) operating on Windows 2000 or later operating systems. The Block 3 application will provide the following JRSOI functions:

a. Will support staging through the preparation of movement documentation, tasking of mode asset support, planning, scheduling and de-conflicting of convoys.
b. Will support onward movement by execution and reporting of units and equipment moving to TAA or other destinations.
c. Will support integration by monitoring movement execution and reporting arrival of units and equipment being moved to TAA or other destinations

3. The Movement Control functional area will allow the user to request, schedule and coordinate organic and CULT assets to support a movement plan. Block 3 will allow movement control activities to receive, create, and maintain movement requirement data and to schedule, coordinate, and manage transportation services to include tasking military carriers. Movement Control functionality will also allow for preparation of shipment documentation for the movement of passengers and cargo.

4. Mode Operations functionality will support driver forecast and asset availability, assignment of movement requirements received from tasking movement control activities, mission planning, creation of driver operations orders, and production of additional documentation to support mission execution.

5. Convoy Operations will be enhanced with the addition of map graphics that will provide improved capabilities for scheduling, managing, and tracking multiple convoy movements to include creating and maintaining convoy routes and automated convoy de-confliction capabilities.

1.3.2 Interfaces with External Systems

1.3.2.1 There are no required Block 3 interface capabilities:

1.3.2.2 The following are the desired Block 3 interface capabilities:

Movement Tracking System (MTS).
The Movement Tracking System Import/Export provides a two way data exchange from MTS to TC-AIMS II providing the capability to track battlefield support vehicles, such as fuel tankers and ammo trucks, by using a worldwide satellite communications network to relay precise position information derived from truck-mounted Global Positioning System (GPS) received to control stations located at battlefield command posts.

1.4 MEASURES OF EFFECTIVENESS AND SUITABILITY

Measures of effectiveness and suitability are addressed in Section 6 of the CDD. The associated Key Performance Parameters (KPPs) are identified in Table 1-1. Requirements implemented in Block 3 to be tested during the OT are shown in the CDD extract below:

1.4.1 Mission Performance Objective

1.4.1.1 Issue (Critical): TC-AIMS II must support movement control activities.

Attribute	Development Threshold	Development Objective
KPP 1 TC-AIMS II must allow movement control activities to receive, create, and maintain designated critical movement requirement data and to schedule, coordinate, and manage critical transportation services to support cult military and commercial movements. (Ref. CDD, Para 1.3.1)	# of successful critical movement control activities by type of activity divided by total number of movement control activities by type is greater than or equal to .85	# of successful critical movement control activities by type of activity divided by total number of movement control activities by type is greater than or equal to .90

1.4.1.2 Issue (Critical): TC-AIMS II must produce standard forms.

Attribute	Development Threshold	Development Objective
KPP 2 TC-AIMS II must produce standard forms and reports completed with critical data needed to accomplish transportation and functions. (Ref. CDD, Para 6.3 Table 2.)	# of successful critical standard forms and reports by type divided by total number of standard forms and reports by type is greater than or equal to .95 (NOTE: when operated by target audience user in operating environment and where successful means the activity is both timely and accurate as specified in the CDD.)	# of successful critical standard forms and reports by type divided by total number of standard forms and reports by type is greater than or equal to .975 (NOTE: when operated by target audience user in operating environment and where successful means the activity is both timely and accurate as specified in the CDD.)

1.4.1.3 Issue: TCAIMS II must associate Transportation Control Numbers (TCNs) with Transportation Movement Requests/Releases.

Attribute	Development Threshold	Development Objective
TCAIMS II must associate Transportation Control Numbers (TCN)s with Transportation Movement Requests/Releases to provide capability for port operators to gain visibility of inbound units and cargo and extend in transit visibility within theater.	95% Accuracy defined as Total # of TCNs successfully attached to the request/Total number of selected TCNs	97.5% Accuracy defined as Total # of TCNs successfully attached to the request/Total number of selected TCNs

1.4.1.4 Issue: TCAIMS II must provide advance Convoy Planning using automated de-confliction for selected convoys.

Attribute	**Development Threshold**	**Development Objective**
TCAIMS II must provide enhanced convoy movement control capability to manage de-confliction and tracking of multiple convoy movements.	95% accuracy defined as total number of convoys executed without conflict/ Total # of selected convoys	97.5% accuracy defined as total number of convoys executed without conflict/ Total # of selected convoys

1.4.1.5 Issue: TCAIMS II must combine multiple Transportation Movement Releases into a single Mission Plan.

Attribute	Development Threshold	Development Objective
Block 3 must provides the capability to receive and create multiple Transportation Requests/Releases to combine into a single mission plan to control, document, and manage assets moving into, within, and out of the theater.	95% accuracy defined as Total # of selected releases included in Mission Plan/ Total # of selected releases	97.5% accuracy defined as Total # of selected releases included in Mission Plan/ Total # of selected releases

1.4.1.6 Issue (Critical): TCAIMS II must be in compliance with Net Centric Readiness.

Attribute	**Development Threshold**	**Development Objective**
KPP 3 Net Readiness. a) Compliance with the NCOW RM b) Compliance with applicable GIG Key interface profiles (KIPs)	a) 100% compliance with common lexicon for NCOW concepts and terminology describing net centricity at the enterprise level and supported by recognizable architectural descriptions provided in the NCOW RM b)100% of published and applicable Key Interface Parameters (KIP) incorporated as requirements within 12	a) 100% compliance with common lexicon for NCOW concepts and terminology describing net centricity at the enterprise level and supported by recognizable architectural descriptions provided in the NCOW RM b)100% of published and applicable Key Interface Parameters (KIP) incorporated as requirements within 12 months of publication through systems evolutionary spiral block

c) Verification of compliance with DOD information assurance requirements d) Support integrated architecture products required to assess information exchange and use for a given capability	months of publication through systems evolutionary spiral block process c) 100% compliance with the security requirements and evaluation of vulnerabilities for each lifecycle development activity. d) Produce 100% of the required architecture products, using the NCOW RM, including the development of high-level interface information for becoming net ready..	process c) 100% compliance with the security requirements and evaluation of vulnerabilities for each lifecycle development activity. d) Produce 100% of the required architecture products, using the NCOW RM, including the development of high-level interface information for becoming net ready.

1.4.2 Logistics Supportability Objective

1.4.2.1 *Issue: TC-AIMS II must be logistically supportable*

1) TC-AIMS II Block 3 will normally operate in an enterprise environment requiring only browser-based access. As dictated by theater operational limitations (i.e., infrastructure), TC-AIMS II Block 3 may be operated in an expeditionary mode employed on an exception basis until such time as normal operations are available/re-established.
2) TC-AIMS II Block 3 will be operated within existing Service infrastructure to include networks and hardware supported by existing organic Service support programs for Automated Information Systems.

1.4.3 Reliability, Availability and Maintainability Objective

1.4.3.1 Issue: TCAIMS II must be Reliable

TC-AIMS II Block 3 Reliability will be 0.95 (threshold) and 0.975 (objective).

1.4.3.2 Issue: TCAIMS II must be Available.

1) TC-AIMS II Block 3 availability will be 0.95 (threshold); 0.975 (objective). "Availability is defined in Sect. 6.5. Lack of network connectivity does not make the Enterprise version of TC-AIMS II unavailable."

2) TC-AIMS II Block 3 non-availability will be correctable 90% of the time by simply rebooting the computer or reconnecting to the NIPRNET and the reboot or reconnect will take less than 8 minutes.

3) When TC-AIMS II Block 3 non-availability is not correctable by a reboot or reconnect, the TC-AIMS help desk must be able to respond to and correct the problem within two hours 80% of the time. For help desk calls that cannot be successfully corrected within two hours, the problem will be corrected within 24 hours 95% of the time.

1.4.3.3 Issue: TCAIMS II must be Maintainable

1) System maintenance, configuration, and software support will be conducted in accordance with the maintenance concept, the Supportability Strategy (SS) and the service annexes to the SS.
2) TC-AIMS II mean time to repair (MTTR) at the organizational level (system operation) shall be 1 hour threshold and 30 minutes objective values.
3) TC-AIMS II mean time to repair (MTTR) at the organizational level (lost information) shall be 8 hours threshold and 1 hour objective values.

1.4.4 Mobility, Deployability and Transportation Objective

1) TC-AIMS II must be capable of movement within the Joint or Service Component Area of Operations.
2) All TC-AIMS II deployable equipment must be capable of movement by DoD personnel as a two-person lift with a weight maximum of 70 pounds (threshold) and be as light as technically feasible (objective). All TC-AIMS II deployable equipment must be capable of movement by all standard modes of transport to include Navy shipping, commercial or military aircraft and military tactical vehicles.
3) The deployable system will require no unusual loading/handling equipment.

1.4.5 Organizational Impact Objective

The TC-AIMS II should have no impact on the structure of the unit to which assigned. Fielding of TC-AIMS II to any unit should not require the assignment of additional occupational specialties to the organization.

1.4.6 Personnel Selection and Training Objective

TC-AIMS II can be operated and maintained with minimal additional training for users having the appropriate Military Occupation Specialty (MOS), beyond that currently taught for the legacy systems being replaced.

1.4.7 Human Factors and Safety Objective

1.4.7.1 Issue: TC-AIMS II human factors will support operation, maintenance and support of the system

TC-AIMS II will employ intuitive operating procedures (based on the processes that are being automated) characterized by a consistent graphic user interface across the range of applications.

1) Visual indicators and screens will be easily readable in all ambient light conditions without the need for ancillary equipment.
2) TC-AIMS II shall provide the capability for system data input and control using multiple means (keyboard and mouse or trackball or touchpad).

1.4.7.2 Issue: The TC-AIMS II system does not present major safety or health hazards while being operated, maintained or supported

TC-AIMS II shall contain no hazards that will cause death, severe occupational illness, or irreversible damage to health.

1.4.8 Electromagnetic Environmental Effects (E3)

Services are required to procure hardware that meets the E3 requirements of DoD Regulation 5000.2R as they pertain to Service procurement of hardware for use with TC-AIMS II.

1.5 CRITICAL TECHNICAL PARAMETERS (CTPS)

The CTPs at Attachment 4 are derived from the CDD critical system characteristics and technical performance measures, and will include the parameters in the Acquisition Program Baseline. The demonstrated values in the matrix will be updated after the Developmental Test (DT) phase is completed. As a minimum, these thresholds must be met before TC-AIMS II can proceed to the Operational Test and Evaluation (OT&E) phase. The CTPs, which support the measures of effectiveness and suitability, are supported by the issues and criteria contained in the System Evaluation Plan (SEP). System compliance will be documented in the Independent Evaluation Report (IER). Although the CTPs outlined in the table are labeled critical, the issues and criteria addressed in the SEP must be evaluated in total to ensure adequate performance of the extensive capabilities required by the CDD.

1.6 INTEROPERABILITY CERTIFICATION (IOPCERT)

TC-AIMS II must satisfactorily meet the criteria established by the Joint Interoperability Test Command (JITC) for Joint Interoperability Certification. IOPCERT will be conducted in accordance with a JITC Interoperability Certification Evaluation Plan (ICEP).

PART II. INTEGRATED TEST PROGRAM SUMMARY

2.1 INTEGRATED TEST PROGRAM SCHEDULE (ITPS)

PM TIS will seek a Full Scale Production Decision Review (FSPDR) to field the TC-AIMS II Block 3 JRSOI in December 2005 for the participating Services.

TC-AIMS II Block 3 is a fully funded program IAW the Joint Cost Position established at Milestone B.

The Operational Test Schedule provided in Figure 2-1 identifies key test activity/events and dates for Test.

Figure 2-1: Operational Test Schedule

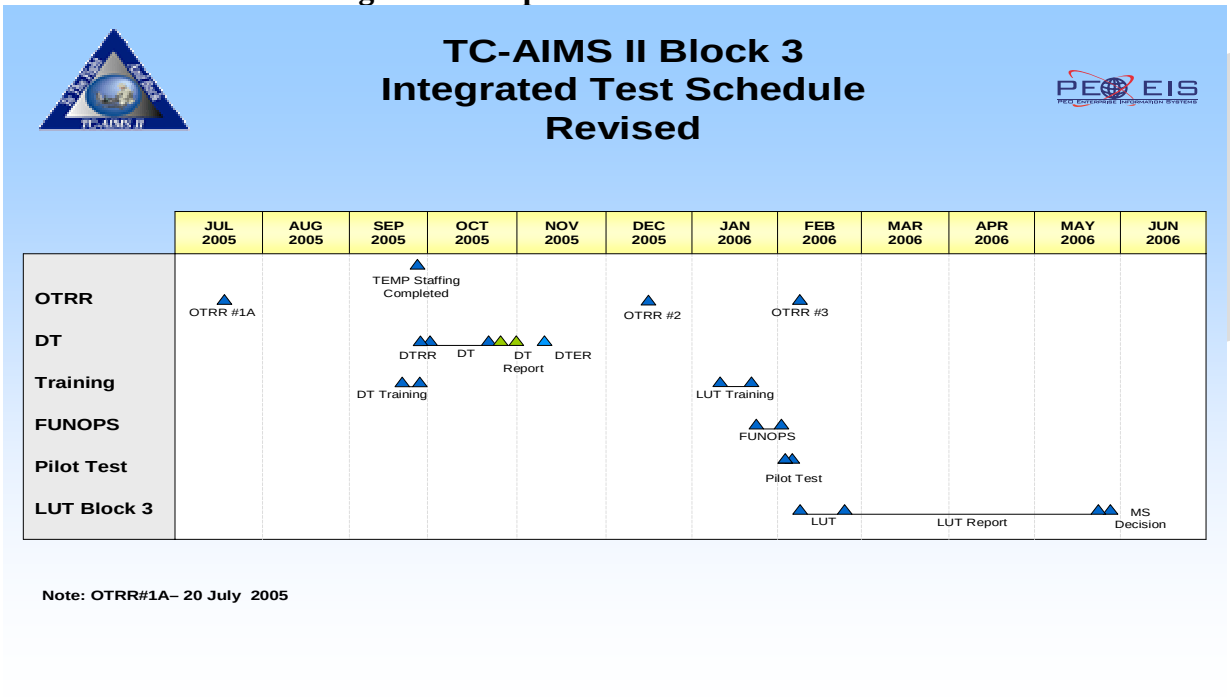

Table 2-2 Operational Test Activity Matrix, below, identifies Key Test Activity/Events and dates for Block 3 testing.

Activity	Planned Date Completed	Actual Date Completed
Operational Test Readiness Review (OTRR) 1	12 May 2005	
TC-AIMS II – Block 3 JRSOI		
Software Qualification Testing (SQT)		
Software Development Test (DT) –Block 3	3-21 Oct 05	
Test Report Process – Block 3	1-7 Dec	
OTRR2	15 Dec 2005	
Training	9-20 Jan 2005	

Activity	Planned Date Completed	Actual Date Completed
	(*9 days; 16th is holiday)	
Functional Operations (FUNOPS)	23 Jan -3 Feb 2005	
OTC Pilot Test	6-7 Feb 2005	
OTRR3	8 Feb a.m. 2005	
OT	8 p.m. – 24 Feb 2005 (*11 ½ days; 20th is holiday)	

Table 2-2: Operational Activity Matrix

2.2 MANAGEMENT

The Under Secretary of Defense for Acquisition Technology and Logistics (USD(AT&L)) designated the Army as the TC-AIMS II lead Service in Nov 95. Within the Army, the Director of Information G6 serves as agency CIO. The PEO provides acquisition support and oversight. The Army G4 is the TC-AIMS II proponent. PM TIS manages the development, testing, fielding and initial post deployment software support. The Assistant Secretary of Defense for Network Information Integration (ASD(NII)) chairs the TC-AIMS II Information Technology Overarching Integrated Product Team (IT-OIPT) and is the Milestone Decision Authority (MDA). The Deputy Under Secretary of Defense for Logistics and Material Readiness (DUSDL&MR) is the Office of the Secretary of Defense (OSD) Principal Staff Assistant (PSA) for TC-AIMS II. The Assistant Deputy Under Secretary of Defense for Transportation Policy (ADUSD-TP) chairs the Joint Transportation Management Board (JTMB) which provides TC-AIMS II guidance and vision. U.S. Joint Forces Command serves as the joint user representative and chairs the Joint Requirements Board (JRB) responsible for defining, receiving, reviewing, validating, prioritizing, approving, and tracking functional requirements.

The Transportation Information Systems (TIS) Project Manager reports through the Program Executive Office, Enterprise Information Systems (PEO EIS) to the Army Acquisition Executive (AAE). The TIS project manager chairs Working-level Integrated Product Teams (WIPTs) for testing, technical, security, cost, communications and integrated logistics support. The U.S. Army Test and Evaluation Command (ATEC) is the lead Operational Test Agency (OTA) for TC-AIMS II.

2.2.1 Participants

2.2.1.1 PM TIS

PM TIS manages the design, development, testing, training, software extension and logistics support of the Block 3 product. The PM TIS is staffed by the participating components in accordance with the May 97 Joint Staffing Memorandum of Agreement (MOA) and Army policies for program office staffing. The staff is augmented by matrix support from various Army activities and program support contractors. PM TIS is responsible for the development of the TEMP and chairs the T&E WIPTs. PM TIS is also responsible for the planning and conduct of the Block 3 Developmental Test.

2.2.1.2 PEO EIS

PEO EIS provides management and acquisition oversight of the PM TIS and provides representation to the Joint Requirements Board (JRB), the Configuration Management Board (CMB) and JTMB. PEO EIS forwards the TEMP to OSD for staffing and approval.

2.2.1.3 Department of the Army G4

The Army G4 is the Army staff proponent for TC-AIMS II and is the focal point for Army lead Service responsibilities. G4 represents the Army on the JTMB and CMB. G4 will be the user representative for decisions delegated to the PEO EIS and signs the User Representative Concurrence page for the Army.

2.2.1.4 Deputy Under-Secretary of the Army (Operations Research) (DUSA-OR)

The DUSA-OR signs Lead Service Approval of the TEMP.

2.2.1.5 Office of the Assistant Secretary of Defense (OASD) (NII)

OASD (NII) is the TC-AIMS II MDA and the Principal Director for OSD approval.

2.2.1.6 Office of the Secretary of Defense, Deputy Director, Systems Engineering, (Assessment & Support) OUSD AT&L DS/SE(A&S)

DS/DT&E is responsible for DT&E and engineering oversight within OSD, and for staffing and coordinating the System Engineering Plan and the TEMP within OSD and securing approval from OIPT Chairman.

2.2.1.7 Director, Operational Test and Evaluation (DOT&E)

DOT&E exercises oversight of all aspects of TC-AIMS II OT&E. DOT&E reviews the System Evaluation Plan (SEP) and approves the Event Design Plan (EDP). After considering the results of OT&E and input provided by the OTAs, DOT&E provides an independent assessment of the operational effectiveness and suitability of the system to the IT-OIPT and to Congress. The DOT&E is an OSD TEMP approval authority.

2.2.1.8 Army Test and Evaluation Command (ATEC)

ATEC is the lead OTA for TC-AIMS II and exercises overall responsibility to plan and conduct TC-AIMS II OT&E, report results, and provide system-level evaluations of effectiveness, suitability and survivability.

1. United States Army Operational Test Command (OTC): OTC plans, coordinates and conducts TC-AIMS II operational testing.
2. United States Army Evaluation Center (AEC): AEC performs the developmental and operational evaluation of the TC-AIMS II system, and produces the System Evaluation Report (SER) and Bottom-Line Summary (BLS) for DOT&E and the MDA.

2.2.1.9 Joint Interoperability Test Command (JITC)

The JITC recommends certification of system interoperability by assessing interoperability test results. The JITC participates with testing agencies to ensure that duplication is minimized and that data collected is valid and sufficient for Joint Interoperability Certification purposes. As a member of the ATEC Systems Team (AST), JITC works in consultation and coordination with the AST members to provide Joint Interoperability Certification test results and SER input for TC-AIMS II upon the conclusion of testing. Based on the successful demonstration of interoperability requirements, including conformance with the Joint Interoperability and Engineering Organization (JIEO) Standards Profile for TC-AIMS II, the JITC is responsible for Joint Interoperability Certification. The JITC provides the Program Manager (PM) with an interoperability assessment letter.

2.2.1.10 Information Systems Engineering Command (ISEC)

TC-AIMS II undergoes certification and accreditation in accordance with DoD D 5200.40, DITSCAP, Jan 97 and DoD 8510.1-M, DITSCAP Application Manual, Jul 00. The DAA has appointed the Information Systems Engineering Command (ISEC) Information Assurance and Security Engineering Directorate (IASED) as the certification authority. IASED will conduct security surveys and perform the security test and evaluation (ST&E) of TC-AIMS II. IASED will also conduct a comprehensive evaluation of the technical and non-technical security features of TC-AIMS II and other safeguards made in support of the accreditation process. The certification authority provides the DAA with the results of the ST&E and an accreditation recommendation based upon the results of the ST&E.

2.2.1.11 United States Joint Forces Command (USJFCOM)

USJFCOM serves as the joint user representative for TC-AIMS II. They are the arbitrator of requirements and provide decisions and direction to the Program Manager for TC-AIMS II product implementation.

2.2.1.12 United States Air Force (USAF), United States Navy (USN) and United States Marine Corps (USMC)

The USAF, USN and USMC provide representation to the JTMB, CMB, and JRO and are responsible for funding, procuring, and installing necessary hardware for TC-AIMS II. The USAF, USMC and USN provide PM TIS staffing in accordance with the Joint Staffing MOA.

2.2.2 Working-Level Integrated Product Team (WIPTs)

The PM TIS established WIPTs for test and evaluation, cost, integrated logistics support, security, communications, requirements and technical activities as advisory bodies to the PM. WIPT's serve as a direct means of communication between the PM TIS and offices concerned with the oversight and review processes. The WIPT concept calls for empowerment of representatives to speak for their organizations on pertinent matters.

WIPTs are chaired by PM TIS or a designated representative. The Services have representation on each WIPT. OSD staff activities, Joint Staff activities, Defense Information Systems Agency (DISA), and the Component activities may be represented. Other program participants may be represented at one or more of the WIPTs within their organization's area of responsibility or oversight.

2.2.2.1 Test and Evaluation WIPT

The Test and Evaluation WIPT provides a forum to develop the Block 3 test strategy, schedule, and plans. The WIPT also provides a means to review and update the TEMP and resolve or elevate test related issues.

PART III. DEVELOPMENTAL TEST AND EVALUATION OUTLINE

3.1 DEVELOPMENTAL TEST AND EVALUATION (DT&E) METHODOLOGY

DT&E is linked to the TC-AIMS II incremental Acquisition Strategy. Each developmental increment is subject to TIS JPMO Developmental Testing (DT). The scope of DT is based on DA PAM 73-1, "Test and Evaluation Guidelines," dated May 2003. The functional, hardware and communication configurations; test scenarios and events; evaluation scope; test limitations; and DT&E objectives for developmental tests for Block 3 are described in Table 3-1.

PM TIS will produce and implement a developmental test plan to ensure that all technical and functional requirements for Block 3 have been properly developed in support of the JRSOI mission. Test data, in addition to physical access to the test environment will be made available to the Independent Evaluator. An independent evaluation of test results will be provided to PM TIS by the IDE in support of determining functional software maturity and readiness for system to enter OT.

The focus of TC-AIMS II DT is based on measuring and assessing the system's ability to achieve the Key Performance Parameters (KPP). DT events are conducted in a laboratory environment but closely follow the OT scenario. The primary event driver is the JRSOI functional scenario.

3.1.1 Developmental Test (DT)

DT addresses system performance, technical and functional characteristics (hardware, software, interfaces and communications). The DT effort begins with a Software Qualification Test (SQT) conducted by the contract developer and followed by a government Software Development Test (SDT) to ensure that all capabilities and requirements of the system have been met.

3.1.2 Software Qualification Test (SQT)

The developer executes technical test procedures and functional test scenarios on target hardware to authenticate compliance with all applicable system requirements. In preparation for the SQT, the TC-AIMS II developer conducts the following incremental build tests on the developer's test suite using benchmark test files:

1. **Unit Test (UT).** The unit test validates requirements expressed in the detailed design descriptions and software requirement specifications. In addition, unit testing ensures that all source statements in a unit have been executed.
2. **Integration and Test (I&T).** The objective of this activity is to integrate two or more functional threads from the bottom-up and to test that the composite software works as intended without adverse affects. All integrated functional threads should accept valid inputs and produce correct outputs as specified for the associated sub function(s). This process continues until all units are integrated into a delivered suite of software.

3.1.3 Software Development Test (SDT)

The SDT is a system test conducted by the PM-TIS executed on target hardware using realistic data files supplemented with user prepared data. Objectives of the SDT are to obtain government confirmation that the design meets technical performance and operational requirements. System users participate in the technical and functional aspects of the SDT. Software, interfaces and interoperability requirements comprise the total system to be validated.

3.1.4 Developmental Test Readiness Review (DTRR)

PM TIS conducts a DTRR prior to the start of SDT. The DTRR determines that the following entry criteria have been met:

1. Evidence of successful completion of the SQT. (define "evidence of successful completion")
2. The software provided for test has been identified with name and version identifiers and has been QA certified.
3. A T&E WIPT coordinated TEMP has been updated to reflect the developmental test.
4. The RAM failure definition and scoring criteria has been identified.
5. The test hardware configuration has been defined.
6. A safety assessment report has been approved by the TIS-PM
7. A safety release statement has been provided.
8. System documentation is in final draft.

3.1.5 Developmental Test Exit Report (DTER)

The PM-TIS provides a development test exit report at the completion of SDT. The report identifies that the following exit criteria has been met:

1. The DT objectives have been met and there are no open Priority 1 or 2 (Critical/High) problem reports.
2. All Priority 3 (Medium) problems have been documented as applicable.
3. All unmet criteria are identified and an impact statement provided.
4. A statement is provided concerning any restrictions/limitations during the test to ordinary operations under fielded conditions.
5. A base-lined version of software is ready for delivery to the operational test community.
6. A list of available system and user documentation is provided.
7. The hardware configuration is identified.

8. JITC attests that TCAIMS II has demonstrated basic interoperability with its Block 3 external interfacing systems during DT and is ready to proceed into an operational test and evaluation posture of its joint interoperability characteristics.

3.2 FUTURE DEVELOPMENTAL TEST AND EVALUATION

DT&E is linked to the TC-AIMS II incremental Acquisition Strategy. Each developmental increment receives a government DT. The scope of DT is based on DA PAM 73-1, "Test and Evaluation Guidelines," dated May 03. The functional, hardware and communication configurations; test scenarios and events; evaluation scope; test limitations; and DT&E objectives for developmental tests for Block 3 are described below.

3.2.1 Configuration Description

TC-AIMS II Block 3 is a component of an integrated Transportation Information Management system designed for access through the world-wide web. The Block 3 component does not have any hardware requirements, rather the added functionality will leverage from hardware that has been fielded in support of previous system Blocks.

3.2.2 Developmental Test and Evaluation Objectives

Full system testing is conducted to validate system performance, accuracy and validity, security, functionality, and interoperability. This is accomplished by ensuring that the system capabilities and the functional performance of the system are exercised, verified and validated as well as validating regulatory compliance, Block 3 products, and training. Specific objectives of the SDT include the following:

- Validate Critical Mission Functions (CMF)
- Validate Key Performance Parameters (KPP)
- Evaluate Critical Operational Issues and Criteria (COIC) in Attachment 4
- Validate Critical Technical Parameters (CTPs) in Attachment 5
- Viability to successfully conduct an OT (specific language from PAM)

3.2.3 DT Events, Scope of Testing, and Basic Scenarios

Several events occur during the DT, many of which are sequential by nature. Throughout the DT, results are analyzed, software revised as appropriate, and regression testing executed. All test incidents are recorded in the configuration management change control repository. Final analysis of the test results is provided in a formal test report submitted to the Operation Test Readiness Review Certification Authority

The two major events are SQT followed by SDT. The S QT test results culminate from the contract developer's unit, integration and system test activities. Successful SQT results lead to the conduct of a Developmental Test Readiness Review (DTRR), essential to the decision to

begin SDT. A Data Authentication Group (DAG) chaired by the PM-TIS Test Director is conducted on an as-needed basis throughout the SDT. A Developmental Test Exit Report (DTER) is provided at the conclusion of the SDT.

The scope of the Block 3 DT will focus on the validation and verification of required technical parameters and ensures the system provides the functionality needed to support the JRSOI business process. The DT employs a set of test methods for collection of data to include:

1. **Inspection:** Verification by visual examination
2. **Analysis:** Verification by technical, mathematical or analytical evaluation
3. **Demonstration:** Verification of operation of the item under a specific condition
4. **Test:** Verification through systematically exercising the applicable item under appropriate conditions with instrumentation and collection, analysis, and evaluation of quantitative and qualitative metrics.

Technical testing primarily pertains to system security, system interfaces, database performance, interoperability, and regulatory compliance. PM-TIS leverages SQT technical test results as input to the SDT technical verification.

Functional Testing will be conducted with the use of scenarios based on real world JRSOI needs. These scenarios will be developed to demonstrate that applicable requirements defined in the system specification have been built into Block 3, and that it simulates the JRSOI business process. This method ensures that all functional capabilities and requirements are exercised and verified.

3.2.4 Limitations

None.

PART IV. OPERATIONAL TEST AND EVALUATION OUTLINE

4.1 OPERATIONAL TEST AND EVALUATION OVERVIEW

In accordance with DoD regulations 5000.1 and 5000.2, the Army Test and Evaluation Command (ATEC) is responsible for the conduct of Operational Test (OT) of TC-AIMS II and from the results prepare an integrated operational evaluation. ATEC is comprised of two subordinate commands for the testing of TC-AIMS II, Block 3. These commands are the Army Evaluation Center (AEC) and the Operational Test Command (OTC). ATEC will conduct testing of Army units. The OT will be based on observing live day-to-day operations or Command Post Exercises (CPXs), which representative users perform the transportation tasks required to receive, stage, onward move, and integrate personnel, cargo and equipment using TC-AIMS II and Service legacy or manual systems. The Army will move battalion/squadron-sized unit(s) in conjunction with a brigade CPX or actual exercise. Scripting will be used only as necessary. System evaluations will focus on the usefulness, timeliness and accuracy of critical mission functions, reports and outputs required to complete the unit in-theater planning, coordination and execution mission.

ATEC will combine data gathered from observations during CE events, DT and operational tests for each service to produce a cost-effective, risk-reducing test and evaluation program for TC-AIMS II. ATEC will plan and execute a Limited-User Test (LUT) to acquire data for evaluating TC-AIMS II. Significant changes to the production configuration during or after DT may invalidate previous test events and data for evaluation purposes.[significant changes to production configuration should result in a satisfactory regression test being conducted prior to going to OT][Should only enter OT with frozen software that has successfully completed DT and/or regression testing] These test events may then have to be repeated during OT to demonstrate production-representative performance. ATEC will test any and all capabilities provided by TC-AIMS II required to support the JRSOI mission.

PM TIS is developing TC-AIMS II using an incremental acquisition strategy with an evolutionary design process. TC-AIMS II Block 1, Basic Unit Move; Block 2, Enhanced Unit Move; and Block 3, Joint Reception, Staging, Onward movement, and Integration (JRSOI) were developed to perform the requirements shown in Attachment 1, and to support the Critical Mission Functions (CMF) grouped in Operational Profiles (OP) shown in Table 4-1.

Whereas Units are the ultimate customer of TC-AIMS II JRSOI services, the MCTs are the primary users of TC-AIMS II in JRSOI operations. MCTs have a distinctly separate set of OP/CMFs (Table 4-2) that they must perform in order to support Units achieving success in their set of OP/CMFs. JRSOI success is ultimately measured by the final integration of a mission-ready Unit into the COCOMs forces. As data are collected during the test, it will be identified and associated with a CMF in the Logistician CMF list, and roll up to show their contribution to success of Unit CMFs and ultimately Unit Integration.

Supporting Logistician JRSOI Operational Profiles ↓	**Units JRSOI Operational Profiles** →			
	Reception CMFs ↓	**Staging CMFs** ↓	**Onward Movement CMFs** ↓	**Integration CMFs** ↓
Movement Control (MC)	In-check personnel by unit	In-check personnel by unit	Schedule movement*	In-check unit personnel
	In-check equipment by unit	In-check equipment by unit	Coordinate movement*	In-check unit equipment
	Report discrepancies by unit	Report discrepancies by unit	In-Transit Visibility*	Report unit discrepancies
Mode Operations (MO)	Create movement plans	Create movement plans	** - supported by MO and CO also*	
Convoy Operations (CO)	Create convoy plan	Create convoy plan		
ALL (MC, MO, CO)	Generate movement documentation	Generate movement documentation		

TABLE 4-1: TC-AIMS II BLOCK 3 UNIT AND SUPPORTING LOGISTICIANS' OPERATIONAL PROFILES AND CRITICAL MISSION FUNCTIONS CROSSWALK

Logistician OP/CMFs			
Operational Profiles	Movement Control	Mode Operations	Convoy operations
Critical Mission Functions	• manage movement requirement data • task military carriers • identify commercial carrier support requirements • prepare shipment documents • track passengers • track cargo	• forecast driver availability • forecast transportation asset availability • assign movement requirements to assets • conduct movement mission planning • create driver operations orders produce supporting documents	• create convoy routes • deconflict convoys • provide detailed map graphics • create convoy documents and reports

TABLE 4-2 SUPPORTING LOGISTICIAN OP/CMFs

JFCOM, as the Single User Representative, is the Service voice for scenario coordination and development. Individual services will provide input to ATEC through JFCOM. JFCOM is ultimately responsible for the TC-AIMS II requirements, and will aid ATEC in ensuring that these requirements are tested and met. This includes developing scenarios to exercise the system. JFCOM is empowered to make decisions regarding Service-specific differences in the TC-AIMS II testing process.

4.1.1 Pre-Test Reporting Requirements

Before the start of each operational test event, OTC will conduct a final OTRR to determine if the system and all test participants are ready for OT. At this final OTRR, the following reports or certifications are required:

1. The Army's Service Acquisition Agent, IAW DoD 5000.2, certifies TC-AIMS II is ready for Operational Test and Evaluation.
2. PM TIS certifies, and ATEC agrees, developmental testing (DT) and exit criteria stated in PART III have been met.
3. OT scenarios have been developed and verified by OTC.
4. Users will conduct Functional Operations (FUNOPS) to verify the business processes and operating procedures support the JCS JRSOI concept and the Army CONOPS.
5. The PEO EIS certifies TC-AIMS II is ready to enter OT and that no software Priority 1 and 2 problems exist and workarounds are in-place for Priority 3 problems.
6. Approved operational and/or system view architectures are made available to the AST.
7. PM TIS provide to ATEC copy of System Security Authorization Agreement (SSAA) and PEO EIS certifies security requirements based on PM TIS security and IA test results have been addressed in accordance with the DoD Information Technology Security Certification and Accreditation Process (DITSCAP).
8. PEO EIS provide a generic accreditation of TC-AIMS II or an Interim Authority to Operate (IATO) for the period of Army OT.
9. The PM TIS provides a safety release and final versions of all test support packages.
10. Combined Arms Support Command (CASCOM) training directorate with JFCOM input from each participating Service certifies that test players in each Service are adequately trained to operate and provide system administration for the TC-AIMS II system during the Block 3 OT.
11. Site representatives certify test sites are ready for OT and provide a site security accreditation.
12. Service representatives certify test unit personnel are trained and committed for the duration of the test, as applicable.
13. The test organizational elements and PM TIS will certify that the database(s) supporting the test are current prior to OT.

14. The PM TIS certifies that TC-AIMS II meets the appropriate level of DII/COE compliance.
15. JITC attests that TC-AIMS II conforms to applicable standards preparatory to interoperability test certification in accordance with CJCSI 6212.01C.

4.2 CRITICAL OPERATIONAL ISSUES AND ADDITIONAL ISSUES

4.2.1 Critical Operational Issues and Criteria (COIC)

A summary of the COIC to evaluate TC-AIMS II Block 3 is contained in Table 4-3. The full COIC text is contained in Attachment 4 of this TEMP.

4.2.2 Additional Issues

In addition to the COICs from the functional proponent, the ATEC System Team has developed two additional issues (AI); see Table 4-4, to ensure that a comprehensive operational test and evaluation is prepared. Additional issues include AI 1 (Business Practices and Workarounds) as an effectiveness issue and AI 3 (COOP) as a survivability issue. The AIs will be used to obtain evaluation information to prepare an operational evaluation by the ATEC.

TABLE 4-3: TC-AIMS II BLOCK 3 CRITICAL OPERATIONAL ISSUES AND CRITERIA (COIC)

Notes:
[1] Reliability, Availability and Maintainability (RAM), Manpower and Personnel Integration (MANPRINT), Integrated Logistics Supportability (ILS), and Enterprise Management/System Administration will be evaluated as separate identifiable criteria under COI 4 (Supportability/Maintainability).

Table 4-4: TC-AIMS II Additional Issues

Name	Issue
Business Practices and Workarounds (AI 1)	Does TC-AIMS II support the standard business practices as defined by USJFCOM (Joint Deployment Process Owner) and USTRANSCOM (Distribution Process Owner) to include standard procedures and regulations, and do workaround procedures facilitate critical mission function (CMF) accomplishment?
Continuity of Operations (COOP) (AI 2)	Are the TC-AIMS II System functions and SOPs for local data base backup, alternate site data backup and restoration of operations adequate for continued user accomplishment of critical mission functions?

4.3 FUTURE OPERATIONAL TEST AND EVALUATION

In the evolutionary development of TC-AIMS II, future acquisition blocks will add functionality and interfaces as determined by PM TIS and the TC-AIMS II Joint Requirements Office (JRO) until full operational capability is achieved. ATEC plans to support the decisions to field future blocks of TC-AIMS II with an evaluation that uses data from contractor testing, Government DT evaluated by the independent developmental evaluator, and an OT on each Block. The level of OT for each Block will be determined by applying the provisions of DOT&E memo, *Guidelines for Conducting Operational Test and Evaluation for Software-intensive System Increments*, dated June 2003. A risk assessment will be conducted in accordance with the DOT&E memo to determine the level of OT required for each system block. This determination will be made as

the JRO/PM TIS provides details on the functionality to be contained in each of the follow-on blocks. Subsequent OT events will focus on the new functions added by that increment with adequate regression testing to ensure that all previous functions continue to support the user and mission needs.

DOT&E Guidance requires that the system configuration, OT&E objectives, events, scope of testing, scenarios, and test limitations for all future phases of OT of a system be described. For ease of readability and to facilitate communication and coordination among all members of the acquisition team, these required subjects are presented in a tabular format in Table 4-4 and discussed the following paragraphs. The OT events for Block 3 and future Blocks are the column headings for the table. This enables the reader to quickly assess the similarities and differences between the OT events.

Table 4-4: Operational Test and Evaluation of TC-AIMS II

	Block 3 Movements Control and Planning/Map Graphics Incremental Strategy	**Future Planned Blocks 4 and 5** Evolutionary Strategy
Functional Configuration	• Provides most of the 21 Critical Mission Functions across 7 Operational Profiles • OP1 – Reception • OP2 – Staging • OP3 – Onward Movement • OP4 – Integration • Provides selected interfaces	Will include all OP/CMFs and additional functionality as determined by Joint Requirements Office and approved by Configuration Management Board: • Block 4 – Maritime Prepositioned Forces and Theater Operations • Block 5 – Installation Transportation Office/Transportation Management Office (ITO/TMO)
Hardware Configuration	• Enterprise via Web-browser • Expeditionary (Standalone)	• To be determined by Joint Requirements Office and approved by Configuration Management Board
Communication Configuration	• Internet • Commercial/Defense Information Systems Network (DISN) • Tactical communications • Floppy disk	• To be determined by Joint Requirements Office and approved by Configuration Management Board
OT & E Objective	• OT assesses operational effectiveness, suitability & survivability to support MDA decision to field and to develop future system blocks	• TBD by use of risk assessment methodology of the DOT&E memo *Guidelines for Conducting Operational Test and Evaluation for Software-intensive System Increments,* dated 10/10/96, approved by the T&E WIPT
Test Scenarios & Events	• Use live, day-to-day operations or CPX • Scripted scenarios used only as required[1] • One test site for participating with a Battalion or squadron-sized unit moving as part of a brigade • One or more Unified Command participants[2] • All required interfaces and feeder systems will be tested • Actual users as stated in the target audience description	• To be determined by application of the risk assessment methodology of the DOT&E memo *Guidelines for Conducting Operational Test and Evaluation for Software-intensive System Increments,* dated June 2003 and approved by the Test and Evaluation WIPT
Evaluation Scope	• All COICs and AIs will be evaluated for all required functions • Block 3 evaluation will also include Net-Ready issues such as Enterprise Management and Information Assurance	• TBD by use of risk assessment methodology of the DOT&E memo *Guidelines for Conducting Operational Test and Evaluation for Software-intensive System Increments,* dated 10/10/96, approved by the T&E WIPT.
Test Limitations	• Live operations may not stimulate large sample sizes of all functions	• To be determined

Footnotes:

[1] Field operations, use of tactical power generation, tactical communications, shipboard operations, execution (vice planning) of sea transport, and Reserve/National Guard participation are the test events that most likely will need to be scripted. This is based on the low probability of their occurrence during any selected 30-day operational test window.

[2] Evaluation of JOPES and GTN interoperability will require some level of participation of members of one or more of the Unified Commands

.

4.3.1 Configuration Descriptions

The hardware configuration of TC-AIMS II Block 3 consists of Army provided commercial-off-the-shelf (COTS) computer systems. This hardware must be capable of hosting TC-AIMS II as a standalone application. Users may also access the application through a standard Web browser connected through local area networks and the internet to a Regional Access Node (RAN) of the TC-AIMS II Enterprise.

Communication configurations to support TC-AIMS II Block 3 information exchanges include transfer of information via commercial and defense information systems network, or TCP/IP protocols for Internet communication programs. Similar communications will be used to support future blocks and the use of selected Service tactical communication systems will be incorporated.

The system functional configuration for TC-AIMS II will provide movement control and planning/map graphics functionality for 18 CMFs across four OPs. TC-AIMS II will interface with the systems listed as referenced in Para 1.3.2. The Block 3 software development will be frozen and brought under configuration management control of OTC at the end of Block 3 DT and prior to OT Training

4.3.2 Operational Test and Evaluation Objectives

- To verify that TC-AIMS II is an effective tool for use in accomplishing the JRSOI mission; providing accurate and timely information and outputs to end users and interfacing systems
- To ensure that TC-AIMS II is a suitable tool for military and civilian users; easy to use and intuitive, easily learned through proper training, reliable, available, maintainable, and presents no risk to the user through design and use
- To prove that TC-AIMS II is survivable from attack; capable of keeping data secure and preventing intrusion from hostile entities

4.3.3 Operational Test and Evaluation Events, Scope of Testing and Scenarios

The OT will consist of collecting data during live day-to-day operations or CPXs in which representative users (MCTs/TMOs and system administrators) at the test site will use TC-AIMS II and Service legacy or manual systems to perform the transportation and tasks required to support the JRSOI business processes.

JFCOM and the Services will aide ATEC in creating realistic JRSOI scenarios focused on the movement of a nominal battalion/squadron with support elements that require TC-AIMS II users to perform their requisite duties using TC-AIMS II. Where possible, the OT scenario will incorporate an actual unit movement (i.e., battalion) within the context of the larger force deployment scenario. In addition, the OT scenario will require TC-AIMS II users to import data from interfaces such as WPS and GATES, provide ITV data to GTN and interface as necessary with the other systems.

In the Scenario Working Groups (SWG), ATEC and JFCOM will identify the JRSOI mission in the form of a complete scenario. The entire JRSOI process will be laid out to include automated and manual processes. After the entire JRSOI process is identified in the scenario, ATEC will then define and highlight the functions and tasks that TC-AIMS II is required to provide, according to the Joint Requirements Office. TC-AIMS II success hinges on its ability to support the entire JRSOI mission through its required tasks.

A Master Scenario Event List (MSEL) will be developed to provide OTC the data required to answer the Measure of Effectiveness (MOE) and Measures of Performance (MOP). Each scenario event will be mapped to specific JRO requirements in TC-AIMS II. The TC-AIMS II development team has already mapped each JRO to a corresponding task from the Universal Joint Task List (UJTL). This coordination will allow AEC to evaluate each scenario event in the context of its contribution to the overall mission of JRSOI.

TC-AIMS II will be tested to ensure that it provides capabilities-focused, effects-based interoperability and be supportable on the Global Information Grid (GIG). TC-AIMS II must also demonstrate compliance with the Net Readiness KPP (NR-KPP) as described in CJCSI 6212.001C and DOD Directive 4630.5. Interoperability includes both the technical exchange of information and the end-to-end operational effectiveness of that exchange of information as required for JRSOI mission accomplishment. Any interfaces required to support the completion of the JRSOI mission will be tested.

Logistical support for the system during Block 3 OT will be provided as specified in the TC-AIMS II Integrated Logistics Support Plan annex for each Service, with TC-AIMS II software support being provided by the three-tier system addressed in the basic ILSP, along with the enterprise management functions including contract support.

The System User Manual and other system documentation, as provided by the PM TIS during Block 3 fielding/training, will be assessed during the OT. Additional sources of data to be used for the final evaluation of the TC-AIMS II Block 3 system include: test data and evaluation input provided by the IDE from Block 3 DT; observations and assessments conducted during CE events, such as visits to Service beta sites, observing site installation and setup, PM TIS Government Acceptance Testing, and support of a JFCOM exercise if resourced and conducted. No modeling or simulation is planned for use.

4.3.4 Limitations

TBD.

4.4 Evaluation Strategy

The lens chart below (Figure 4-1) illustrates how ATEC plans to evaluate TC-AIMS II ability to support soldiers and sailors attempting to accomplish the JRSOI mission. The left lens shows criteria and Key Performance Parameters for TC-AIMS II Block 3. The middle lens shows how ATEC will look at the capability of TC-AIMS II to interoperate within the family of systems dedicated to the JRSOI mission. The right shows the rollup of the contribution of TC-AIMS II to the JRSOI mission from a COCOM's point of view. The ATEC evaluation will show Army

leadership how the capabilities and limitations found during OT support the Commander's needs for JRSOI support.

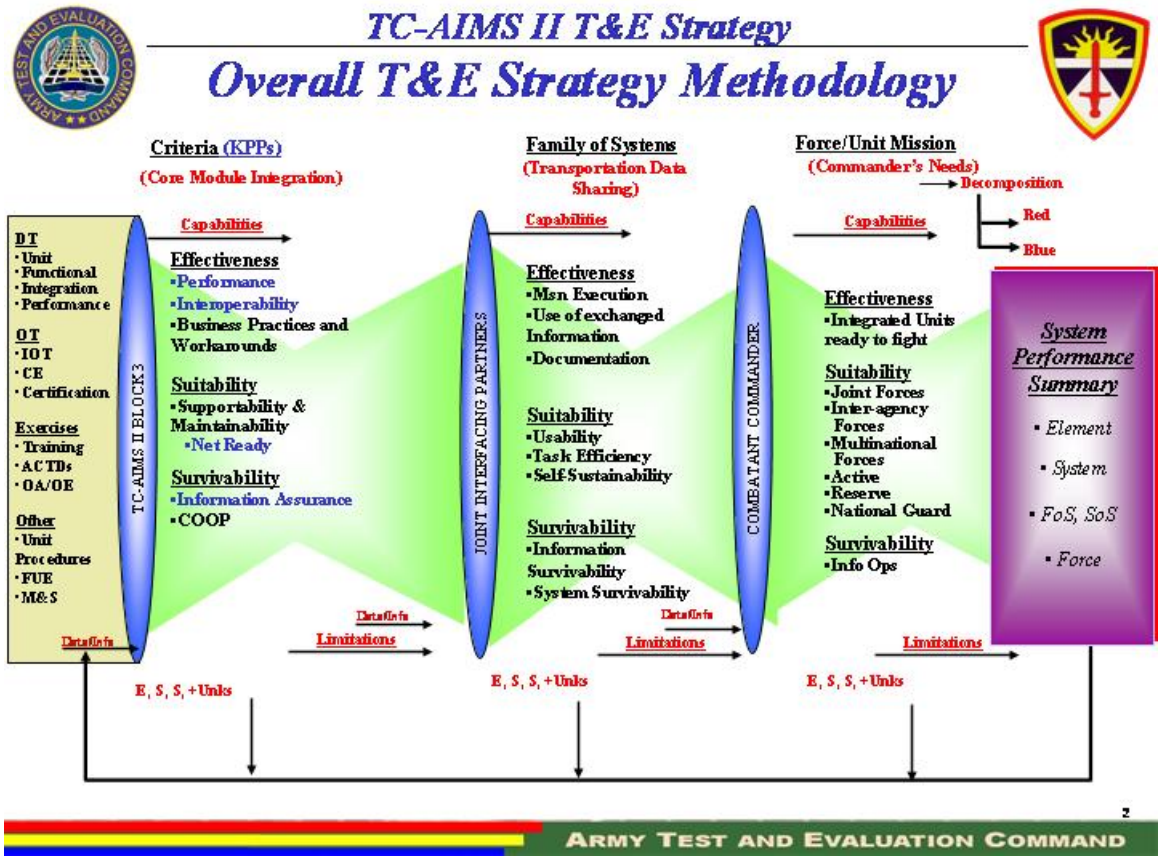

FIGURE 4-1 – OVERALL T&E STRATEGY METHODOLOGY LENS CHART

The detailed evaluation strategy for TC-AIMS II Block 3 is contained in the following paragraphs and the evaluation dendritics provided in Figures 4-1 through 4-3.

4.4.1 System Effectiveness

The evaluation dendritic to evaluate Block 3 system effectiveness is contained in figure 4-1. ATEC has developed a set of evaluation measures that will guide the collection of objective and subjective data for analytical comparisons. Results of all criterion and related supplementary/complementary measures will be combined to address the two critical issues and one additional issue. To be operationally effective, TC-AIMS II must satisfy the requirements of mission performance, interoperability, and business practices and workarounds. Military judgment will be applied to the analysis of data to answer the question, "Will TC-AIMS II provide timely and accurate information needed for users to receive, stage, onward move, and integrate inbound units?" If the conclusion indicates TC-AIMS II meets the users' needs for JRSOI functions and accomplishing movement control missions, the system will be found effective.

Interoperability is the condition achieved when information or services can be exchanged directly and satisfactorily between various systems and their users (JCS Pub 1-02). ATEC and JITC will cooperate to produce the information required for JITC to complete the Interoperability Certification. ATEC will also use the data to address COI 3 on Interoperability. JITC is the sole DoD certifier for Joint interoperability and will use data collected during DT and OT to complete the Block 3 certification. JITC will assist test organizations in identifying what interoperability testing is required to satisfy joint interoperability certification requirements. PM-TIS will provide JITC and ATEC with information on the technical aspects of the TC-AIMS II interfaces such as: status of interface agreements, status of the technical implementation of those agreements, and supporting opinions on causality if an interface is not effective. ATEC will test the effectiveness of information transfer in an operational environment. ATEC will coordinate OT plans with JITC to ensure Joint interoperability test requirements, including the NR-KPP, will be met. ATEC will provide JITC access to the test database and will share the resulting evaluation of the operational timeliness, accuracy and usability of information transferred in an operational environment. ATEC will cite the results of the JITC IOPCERT in the system evaluation report. ATEC and JITC will continue to share data and evaluations on all future operational events.

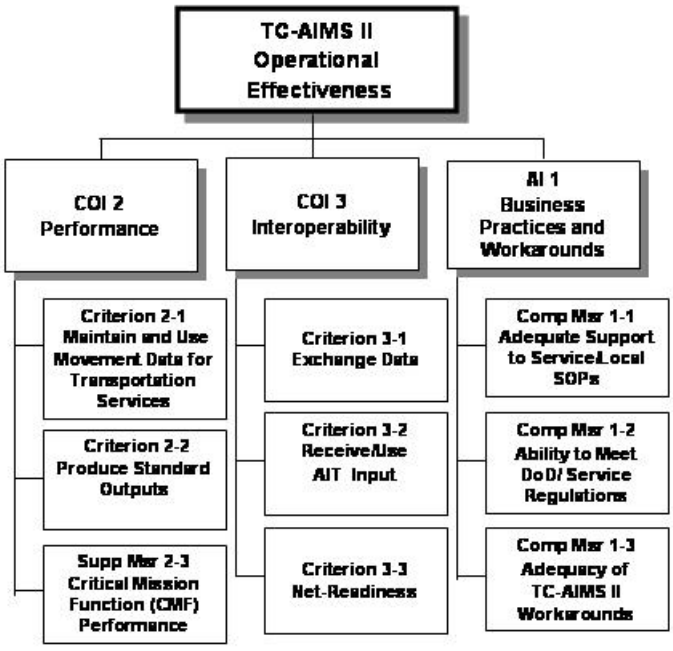

Figure 4-1: TC-AIMS II System Effectiveness

4.5 SYSTEM SUITABILITY

The System Suitability Evaluation dendritic to be used for TC-AIMS II Block 3 is shown in Figure 4-2. Data will be collected on all system suitability measures and results of all criterion and measures will be combined to address the critical issue. To be operationally suitable, TC-AIMS II must satisfy supportability and maintainability requirements for the users. In addition, the Block 3 system must provide adequate Enterprise Management to establish and maintain the Web-based server architecture planned to be fielded, in conjunction with Block 3 functions for system administrators to manage standalone workstations and deployed system networks. Military judgment will be applied to the analysis of all data to answer the question, "Given training, will soldiers, sailors, and DoD civilians be able to operate, support and maintain TC-AIMS II in an operational environment?" If analysis concludes that issues are adequate, then TC-AIMS II will be found suitable for operations in the intended environment. Human-System Integration and Block 3 training will be integrated into the evaluation of the MANPRINT and ILS issues, respectively.

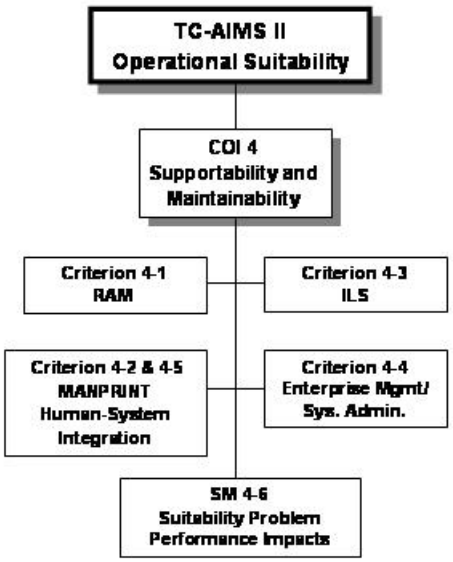

Figure 4-2: TC-AIMS II System Suitability

4.6 SYSTEM SURVIVABILITY

The dendritic to be used for evaluation of TC-AIMS II Block 3 System Survivability is in Figure 4-3. Data will be collected on all system survivability measures. Results of all complementary measures and criteria will be combined to address the critical issue and additional issue. To be operationally survivable, TC-AIMS II must satisfy system security and information assurance requirements and provide users with COOP capabilities to protect system information from unauthorized exploitation and corruption. Assessment of information assurance will focus on these four areas: (1) prevent data disclosure; (2) provide data integrity; (3) protect data IAW classification; (4) prevent attacks. Controlled attempts to penetrate the TC-AIMS II system or deny information or use will be conducted during OT to assess the ability of users to implement safeguards. Military judgment will be applied to the analysis of all data to answer the question: "Will the TC-AIMS II system and its users be able to adequately safeguard vital movement information?" If analysis concludes that issues are adequate, then TC-AIMS II will be found survivable.

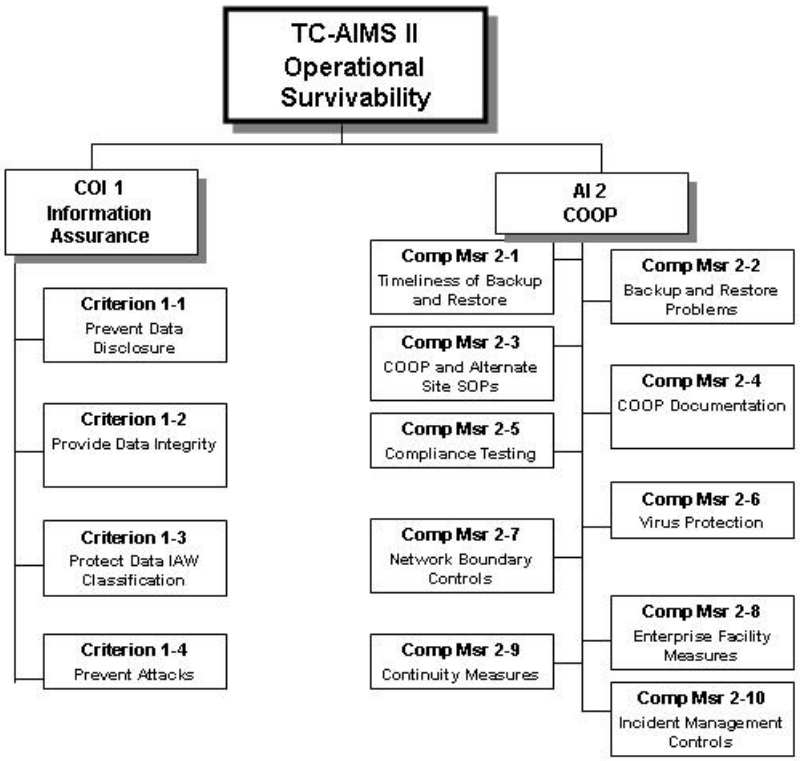

Figure 4-3: TC-AIMS II System Survivability

4.6.1 Functional Operations (FUNOPS)

Prior to the start of OT, the users at each test site will have a period of two weeks to implement and dry run the joint scenario using TC-AIMS II. This period provides the users with an opportunity to combine the TC-AIMS II functionality with that site's standard operating procedures and ensure the test unit has a complete understanding of how to best utilize the Block 3 system to accomplish JRSOI business processes and theater operations. By the end of FUNOPS, each test site would have successfully used TC-AIMS II to execute the scenario. ATEC will observe system administration activities and operations required by users to perform the establishment of an Expeditionary (standalone) workstation and a deployed server.

4.6.2 Planning Assumptions and Caveats

This TEMP is developed based on good faith estimates of the functionality that the PM TIS will incorporate in each Block of TC-AIMS II.

4.7 LIVE FIRE TEST AND EVALUATION

TC-AIMS II does not require live fire test and evaluation under the provisions of Title 10 USC 2366.

PART V. TEST AND EVALUATION RESOURCE SUMMARY

5.1 RESOURCE SUMMARY

Key test and evaluation resources, both government and contractor, which will be used during the course of the acquisition program are identified below. See the ATEC Outline Test Plan (OTP) 2006-LU-C4-TCAIM-A1203, for additional details on test requirements. Primary resource drivers will be these T&E concepts that apply to all Software Development Tests and all Operational Tests for TC-AIMS II and subsequent Blocks.

Software Development Testing will be based on simulated deployment of a brigade sized command post in a lab environment, and exercise the processes of a Theater Movement Control Agency (TMCA) performing all the JROS&I functions Block 3 provides. The lab environment will be configured to represent each Service's fielding plan for TC-AIMS II to support a TMCA. Representative users will perform the transportation tasks required to receive, stage, onward move, and integrate personnel, cargo, and equipment using TC-AIMS II and Service legacy or manual systems. The test event will be both free-play and scenario-driven and will focus on the performance of JRSO&I tasks by typical service users supporting an actual live unit deployment or a CPX simulated movement. All required interfaces will be tested. Sufficient numbers of workstations, operators and databases for other required interfaces will also need to be available. (Interoperability is the condition achieved between systems when information or services can be exchanged directly and satisfactorily between them and their users (JCS Pub 1-02).) Required interfaces are listed in Table 1-1 of this TEMP.

The Operational Test (OT) event, a Limited User Test (LUT), will be based on observing live day-to-day operations or command post exercises in which representative users perform the transportation tasks required to receive, stage, onward move, and integrate personnel, cargo, and equipment using TC-AIMS II and Service legacy or manual systems. The test event will be both free-play and scenario-driven and will focus on the performance of JRSO&I tasks by typical service users supporting an actual live unit deployment or a CPX simulated movement. The Service Components will move or simulate the movement of battalion/squadron-sized unit(s). Scripting will be used only as necessary. Testing will be conducted 5 days a week, 8 hours a day, excluding holidays and weekends. A combination of objective and subjective data will be collected using assessments provided by operators, administrators, and subject matter experts. System evaluations will focus on the usefulness, timeliness, and accuracy of critical mission functions, reports, and outputs required to complete the unit in-theater planning, coordination, and execution of the JRSO&I mission. Training (CASCOM), interoperability (JITC), and information assurance (ISEC) will also be evaluated concurrent with this event and assessments in these areas will be provided to AEC.

5.1.1 Test Articles.

PM TIS will provide sufficient quantities of Block 3 software to support each Service and test sites for both the SDT and LUT events. The specific LUT test support requirements and

configurations for each of the test sites are provided in the Outline Test Plan. As noted above, each Service will need to provide a sufficient number of representative TC-AIMS II users to support a brigade sized deployment along with one workstation and one operator for required interfaces as called out in their fielding plans. Table 5-1 shows projected resources to support the portion of the TC-AIMS II Army LUT for these blocks.

Table 5-1: Estimated User Resources to Support Joint Army Navy LUT

Requirement	Number
ARMY	
Theater Movement Control Agency (TMCA)	1
Traffic Mgmt Officer GS (2130)	2
Transportation Mgmt Coordinator O-1/O-3 (88A)	2
Traffic Mgmt Coordinator E-7/E-6 (88N)	7
Transportation Coordinator GS (2102)	7
Motor Transport Operator E-7/E-6 (88M)	4
	Total 23
NAVY	
Construction Battalion Movement Control Members E-6/E-7 (various specialties)	6
	Total 6
AD-HOC Support	
System Administrator (PM)	1
Movement Operations Cell (ATEC)	1
Headquarters Operations Cell (OTC)	1
Required Operators/Workstations for External Interfaces	TBD

LUT requirements will vary by Service based on their unique fielding plan. Army test requirements are intended only to provide planners with a rough order of magnitude resource estimating capability. All configurations will be tested. To accomplish this, garrison and deployed, a laptop will be provided. In addition to the standalone configuration, the networked configuration will be tested. Therefore, enough Automated Data Processing (ADP) equipment to support each Service fielding plan must be provided by PM-TIS.

USN estimates for Block 3 LUT are that they will probably use an Amphibious Construction Battalion (CB) sized force deployment. They estimate this will require about 6 TC-AIMS II workstations and personnel.

These Service resource estimates are preliminary but are sufficient for long range estimations.

5.1.2 Test Sites and Instrumentation

A single test site will be used to support both the Army and Navy test requirements unless it is determined by each Service to provide a dedicated site for their respective Service. The site for the TC-AIMS II LUT tentatively will be at Fort Hood, TX

5.1.3 Test Support Equipment

1. Automated test tools will be coordinated with all sites to be used in collection of AIS test data during the LUT

2. Operational Test Data Server (located at OTC, West Fort Hood, TX)

3. Automated test tools (see Outline Test Plan)

5.1.4 Threat Representation

System security testing and certification will be done primarily by the US Army Information Systems Engineering Command – Information Assurance Security Engineering Directorate (USA ISEC -IASED) during DT. Data will be shared with ATEC and JITC as required. The potential security threats to TC-AIMS II that will be represented during Certification Test include: unauthorized access, fraud and spoofing, service interruption/degradation, and human errors of commission and omission. Refer to TC-AIMS II Certification Plan (ISEC/IASED document).

5.1.5 Test Targets and Expendables

None

5.1.6 Operational Force Test Support

All required interfaces will be tested. This means that at least one workstation and one operator for each required interface for each participating Service will need to be available to send or receive information during previously coordinated times within the overall testing window.

5.1.7 Simulations, Models and Test Beds

None

5.1.8 Special Requirements

PM TIS will provide the laboratory facilities required in support of all Block 3 government SDT, to include coordination of test players and adequate access to all interfaces required for each

Service to be tested. PM TIS will coordinate directly with ATEC and JITC to provide onsite access for observations and to DT test data. The PM TIS Help Desk must be operational as called for in appropriate supporting and fielding plans during all LUT periods. Each Service test site must provide nominal LAN connectivity and infrastructure support during the TC-AIMS II LUT representative of intended Operational Deployment and use of the TC-AIMS II system as specified in Service fielding plans.

5.1.9 Test and Evaluation Funding Requirements

Table 5-2 shows estimated test and evaluation funding requirements by FY and appropriation line below. Funds are programmed for Blocks 2-5.

Table 5-2: TC-AIMS II Test & Evaluation (T&E) Funding Requirements

RDT&E							
Test & Evaluation	**FY05**	**FY06**	**FY07**	**FY08**	**FY09**	**FY10**	**FY11**
	862	**877**	**891**	**908**	**924**	**940**	**0**

5.1.10 Manpower/Personnel Training

Requirements and limitations that effect test and evaluation execution are derived from Integrated Logistics System training schedules, Joint and Service System Training Plans (STRAPs), test site Memoranda of Understanding (MOUs), and test site surveys with identified test units.

5.2 KEY RESOURCE REQUIREMENTS ESTIMATE

5.2.1 DT&E Resource Requirements Estimate

Preliminary estimates of resources required to support TC-AIMS II Software Development Test planners with a rough order of magnitude estimate are contained in Table 5-3.

Table 5-3: SDT Resource Estimates

Tasks	Army	Navy
Develop Test Scenarios	**2-3 persons for two one-week periods**	**1-2 persons for two one-week periods**
SDT Test Event	**2-3 persons for two weeks**	**1-2 persons for two weeks**
SDT DAG	**1 person for 3 days**	**1 person for 3 days**

5.2.2 Live Fire Test and Evaluation

None

5.2.3 LUT Timeline/Resource Requirements Estimate

Preliminary estimates of resources required to support a TC-AIMS II LUT sufficient to provide planners with a rough order of magnitude estimate are in Table 5-4. Specific requirements to support the Block 3 LUT are detailed in the MOUs signed between the PM TIS, OTC and each Service site. No other unique LUT resources are required. Integrated Logistics Support Package (ILSP) specifies the test support packages required to conduct LUT. Total quantity of Personnel requirements are in a TBD status until units and test sites are selected.

Table 5-4: LUT Timeline/Resource Participation

Tasks	Service Rep*	CASCOM	PM	AEC	JITC	OTC
OTRR#2 (15 Dec 2005)	**X**	**X**	**X**	**X**	**X**	**X**
Software Configuration Control (3 Feb 2006)			**X**			**X**
Test Team Training (TBD)				**X**		**X**
User Training (9 -20 Jan 2006)	**X**	**X**	**X**			
FUNOPS (23 Jan- 3 Feb 2006)	**X**		**X**			
Pilot Test (6-7 Feb 2006)	**X**			**X**		**X**
OTRR#3 (8 Feb 2006)	**X**	**X**	**X**	**X**	**X**	**X**
LUT/OT Event 8-24 Feb 2006)	**X**			**X**	**X**	**X**
Final DAG/PAC (NLT 3 Mar 2006)	**X**	**X**	**X**	**X**	**X**	**X**

*Note that Service Rep applies to Army, Navy and JFCOM as applicable.

5.2.4 Resource Shortfalls Introducing Significant Test Limitations

N/A

5.2.5 Discussion of Shortfall Impact

NA

5.2.6 Planned Corrective Action.

N/A

ANNEX A: BIBLIOGRAPHY

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TC-AIMS II Acquisition Program Baseline (APB), (May 01)
TC-AIMS II Acquisition Strategy, (Signed 12 April 2000 by PEO STAMIS)
TC-AIMS II Configuration Management Plan, 14 January 2000
TC-AIMS II Mission Needs Statement (MNS), 07 August 1997
TC-AIMS II System Evaluation Plan

ANNEX B: ACRONYMS

ACRONYM	DEFINITION
0 to n	-Numeric-(zero thru n)
A	**-A-**
A*	Army (*Table 1-1, SER Column)
AAE	Army Acquisition Executive
AALPS	Automated Air Load Planning System (Will replace CALM)
ACA/OCONUS	Air Clearance Authority / Outside the Continental United States
ADM	Acquisition Decision Memorandum
ADNET	Automated Distribution Network (GSA's system)
ADUSD (L/TP)	Assistant Deputy Under Secretary of Defense (Logistics/Transportation Policy)
AE	Army Europe
AEC	Army Evaluation Center
AF	Air Force (*Table 1-1, SER Column)
AI	Additional Issues
AIS	Automated Information System
AIT	Automatic Identification Technology
AMS	Automated Manifesting System
AMSS	Ammunition Management Standard System
ANSI	American National Standards Institute
AO	Action Officer
AOI	Additional Operational Issue
APB	Acquisition Program Baseline
API	Application Programming Interface
ASD (C3I)	Assistant Secretary of Defense (Command, Control, Communications and Intelligence)
ASE	Adaptive Server Enterprise
AST	ATEC Systems Team (formerly OST)
AT&L	Acquisition, Technology, and Logistics
ATAC-AF	Advance Traceability and Control - Air Force
ATEC	Army Test and Evaluation Command
ATLASS-1	Asset Tracking Logistics Automated Supply System
B	**-B-**
BN	Battalion

ACRONYM	DEFINITION
C	**-C-**
C-days	The unnamed day on which a deployment operation commences or is to commence
C/SCS	Cost/Schedule Control System
C2	Command and Control
C2IPS	Command and Control Information Processing System
C4	Command, Control, Communications and Computers
C4I	Command, Control, Communications, Computers and Intelligence
CA	Certification Agent
CAC	Common Access Card
CAEMS	Computer-Aided Embarkation Management System
CALM	Computer-Aided Load Manifesting
CAPS II	Consolidated Aerial Port System II (to be replaced by GATES) (aka: CAPSII/GATES)
CAS-B	Combat Ammunition System Base Level
CBL	Commercial Bill of Lading
CD-ROM	Compact Disk – Read Only Memory
CE	Continuous Evaluation
CEP	Certification Evaluation Plan (JITC)
CFM-ETA	CONUS Freight Management Electronic Transportation Acquisitions
CFM-Host	CONUS Freight Management System - Host
CIM	Corporate Information Management
CJCS	Chairman of the Joint Chiefs of Staff
CM	Configuration Management
CMB	Configuration Management Board
CMF	Critical Mission Functions
CMOS	Cargo Movement Operations System
COI	Critical Operational Issues
COIC	Critical Operational Issues and Criteria
COMPASS	Computerized Movement Planning and Status System
COOP	Continuity of Operations Plan
COTS	Commercial Off The Shelf
CPX	Command Post Exercise
CRIF	Cargo Routing Information File

ACRONYM	DEFINITION
CRS	Component Repair Squadron
CSDT	Computer Software Development Test
CSC	Critical System Characteristics
CSCI	Computer Software Configuration Item
CSSCS	Combat Service Support Control System
CTP	Critical Technical Parameters
CULT	Common User Land Transportation
CWBS	Contract Work Breakdown Schedule
D	**-D-**
DA	Department of the Army
DAA	Designated Approving Authority (formerly: Designated Accreditation Authority)
DALO-	Department of the Army Deputy Chief of Staff for Logistics (office symbol)
DAMMS-R	Department of the Army Movement Management System-Redesign
DA PAM	Department of the Army Pamphlet
DBMS	Data Base Management System
DCSLOG	Deputy Chief of Staff for Logistics (Army Staff)
DD	Defense Department (Form)
DDM	DoD Data Model
DII	Defense Information Infrastructure
DII COE	Defense Information Infrastructure Common Operating Environment
DII COE / JTA	Defense Information Infrastructure, Common Operating Environment/Joint Technical Architecture
DISA	Defense Information Systems Agency
DISN	Defense Information System Network
DIST	Defense Integration Support Tool
DLA	Defense Logistics Agency
DMLSS	Defense Medical Logistics Standard System
DoD	Department of Defense
DOIM	Director of Information Management
DOL	Directorate of Logistics
DOT&E	Director, Operational Testing and Evaluation
DSN	Defense Switched Network

ACRONYM	DEFINITION
DSS	Distribution Standard System
DT	Developmental Testing
DT&E	Developmental Test and Evaluation
DT/OT	Developmental Test/Operational Test
DTR	Defense Transportation Regulation
DTRR	Developmental Test Readiness Review
DTS	Defense Transportation System
DTTS	Defense Transportation Tracking System
DUSA-OR	Deputy Undersecretary of the Army - Operations Research
DUSD (L)	Deputy Undersecretary of Defense (Logistics)
E	**-E-**
EA	Electronic Attack
EDI	Electronic Data Interchange (see also EC/EDI)
EDP	Event Design Plan
EMP	Electromagnetic Pulse
EMS	Electronic Maintenance Squadron
EUCOM	European Command
F	**-F-**
FAB	Field Assistance Branch
FACTS	Financial Air Clearance Transportation System
FAR	Federal Acquisition Regulation
FD	Functional Description
FDSC	Failure Definition and Scoring Criteria
FOC	Full Operational Capability
FQT	Functional Qualification Test (*USAF. Formal testing conducted by developer*)
FRAP	Facilitated Risk Analysis Process
FS	Fighter Squadron
FSS	Fast Sealift Ships
FSSG	Force Service Support Group
FTP	File Transfer Protocol
FUNOPS	Functional Operations (USA ATEC term denotes actual SOP user operation of a new system prior to formal test)
FY	Fiscal Year

ACRONYM	DEFINITION
G	**-G-**
GATES	Global Air Transportation and Execution System
GB	Gigabyte
GBL	Government Bill of Lading
GCCS-A	Global Command and Control System – Army
GCSS-A	Global Combat Support System-Army
GCSS-AF	Global Combat Support System – Air Force
GDSS	Global Decision Support System
GOPAX	Group Operational Passenger System
GOTS	Government Off-The-Shelf
GSA/ADNET	GSA/Depot Transportation System (ADNET)
GTN	Global Transportation Network
H	**-H-**
HCI	Human-Computer Interface
HEROS V	German Convoy Scheduler
HFE	Human Factors Engineering
HHG	Household Goods
HP	Hewlett Packard
HQ	Headquarters
HQDA	Headquarters, Department of the Army
HSIP	Human Systems Integration Plan
I	**-I-**
IAW	In Accordance With
IBS	Integrated Booking System
ICEP	Interoperability Certification Evaluation Plan
ICODES	Integrated Computerized Deployment System
ID	Identification
IDE	Independent Developmental Evaluator
IDP	Incremental Development Package (April 2000 TC-AIMS II development strategy)
IDT	Independent Developmental Test
IEP	Independent Evaluation Plan
IER	Independent Evaluation Report
ILS	Integrated Logistics System/Supportability

ACRONYM	DEFINITION
ILS-S	Integrated Logistics System - Supply
ILSMIS	Integrated Logistics Support Management Information System
ILSP	Integrated Logistics Support Plan
IOC	Initial Operational Capability
IOE	Independent Operational Evaluator
IOPCERT	Interoperability Certification (DISA (JITC) term)
IOT	Initial Operational Test
IOTE	Initial Operational Test & Evaluation
IP	Internet Protocol
IPT	Integrated Product Team
I&RTS	Integrated and Run Time Specification
ISDP	Information Systems Design Plan
ISEC	Information Systems Engineering Command (US Army)
ISEC-TIC	Information Systems Engineering Command – Technology Integration Center
IT	Information Technology
IT-OIPT	Information Technology Overarching Integrated Product Team
ITO	Installation Transportation Office/Officer
ITO / TMO	Installation Transportation Office/ Traffic Management Office
ITPS	Integrated Test Program Schedule
ITV/TAV	In-Transit Visibility / Total Asset Visibility
IV&V	Independent Verification & Validation
IW	Information Warfare
J	**-J-**
J*	Joint (Services) (*Table 1-1, SER Column)
JCS	Joint Chiefs of Staff
JDL	Joint Data Library
JFRG II	Joint Force Requirements Generator II
JIEO	Joint Information and Engineering Organization
JITC	Joint Interoperability Test Command
JOPES	Joint Operational Planning and Execution System
PM TIS	Program Manger, Transportation Information Systems
JRO	Joint Requirements Office (TC-AIMS II)
JROC	Joint Requirements Oversight Council
JRSOI	Joint Reception, Staging, Onward movement and Integration

ACRONYM	DEFINITION
JTA	Joint Technical Architecture (see also/associated with Interoperability, COE)
JTAV	Joint Total Asset Visibility
JTCC	Joint Transportation Corporate Information Management (CIM) Center
JTMB	Joint Transportation Management Board
K	**-K-**
Kb	Kilobytes
KPP	Key Performance Parameters
L	**-L-**
LAN	Local Area Network
LHA	Landing Helicopter Amphibious
LOGMARS	Logistics Application of Automated Marking and Reading Symbols,
LOGMOD	Logistics Module
LSS	Logistics Support Squadron
LUT	Limited User Test
M	**-M-**
MACOM	Major Command (Army)
MAGTF	Marine Air Ground Task Force
MAGTF II	Marine Air Ground Task Force II
MAIS	Major Automated Information System
MAJCOM	Major Command (Air Force)
MANPER-B	Manpower Personnel Readiness Module-Base Level
MANPRINT	Manpower and Personnel Integration
MAOPR	Minimum Acceptable Operational Performance Requirements (obsolete)(now MOES)
MARCORSYSCOM	Marine Corps System Command
MCC	Movement Control Center
MCOTEA	Marine Corps Operational Test and Evaluation Activity
MCT	Mission Critical Tasks
MDA	Milestone Decision Authority
MDAP	Major Defense Acquisition Program
MDSS II	MAGTF Deployment Support System II
MEF	Marine Corps Expeditionary Force
MEP	Mobile Electric Power

ACRONYM	DEFINITION
MEU	Marine Expeditionary Unit
MH	Military Handbook
MMS	Materiel Management System
MMT	Multi-Media Training
MNS	Mission Need Statement
MOA	Memorandum of Agreement
MOBCON	Mobilization Control
MOE	Measure of Effectiveness
MOES	Measures of Effectiveness and Suitability
MOBEX	Mobility Exercise
MOP	Measure of Performance
MOS	Military Occupational Specialty
Movement Planning	Movement Planning
MPMIS	Military Police Management Information System
MRM	Management Reform Mandate
MS	Microsoft
MSL	Military Shipping Label
MTBOMF	Mean Time Between Operational Mission Failure
MTMS	Munitions Traffic Management System
MTS	Military Tracking System
MTTR	Mean Time To Repair
N	**-N-**
N*	Navy (*Table 1-1, SER Column)
NA	Not-Applicable
NAVMC	Navy/Marine Corps
NCFMIS	Navy Construction Force Management Information System
NIMMS	NADEP (Naval Aviation Depot) Inventory Materiel Management System
NSIPS	Navy Standard Integrated Personnel System
NSM	Network and Systems Management
NT	New Technology
O	**-O-**
ODCSLOG	Office of the Deputy Chief of Staff for Logistics (Army)

ACRONYM	DEFINITION
OE	Operational Evaluation
OEL	Organizational Equipment List
OIPT	Overarching Integrated Product Team
OMA	Operation and Maintenance Army
OMC	Optical Memory Cards
OPA	Other Procurement Army
OPR	Organizational Personnel Roster
ORD	Operational Requirements Document
OSD	Office of the Secretary of Defense
OSS	Operational Support Squadron
OST	OPTEC System Team(OBSOLETE TERM: See AST)
OT	Operational Test
OTA	Operational Test Agency
OTC	Operational Test Command (formerly TEXCOM)
OT&E	Operational Test and Evaluation
OTP	Operational Test Plan
OTRR	Operational Test Readiness Review
P	**-P-**
P3I	Pre-Planned Product Improvement
PC	Personal Computer
PCR	Program Change Request
PDF	Portable Data file (Used with 2d Barcode)
PEO	Program Executive Officer / Office
PEO EIS	Program Executive Office
PM	Project Manager Program Manager
PO	Project Officer
POA	Pattern Of Analysis
POC	Point of Contact
POD	Port of Debarkation
POE	Port of Embarkation
PSA	Principal Staff Assistant
PSTN	Public Switched Telephone Network

ACRONYM	DEFINITION
Q	**-Q-**
	NONE
R	**-R-**
RAM	Reliability, Availability, and Maintainability
RDTE	Research, Development, Test & Evaluation
REPSHIPS	Report of Shipments
RF	Radio Frequency
RFID	Radio Frequency Identification
RFW	Radio Frequency Weapons
ROLMS	Retail Ordnance Logistics Management System
R&M	Reliability and Maintainability
S	**-S-**
SAAM	Special Assignment Airlift Mission
SAAS	Standard Army Ammunition System (to be replaced by GCSS-Army)
SA-DBA	System Administrator – Data Base Administrator
SBSS	Standard Base Supply System (replacing ILS-S) (aka: SBSS/ILS-S)
SBU	Sensitive but Unclassified
SDD	Software Design Descriptions
SDF	Software Development Folders
SDT	Software Development Testing
SEP	System Evaluation Plan Note: Versions: Functional (SEP-F), Technical (SEP-T), Developmental (SEP-D)
SER	System Evaluation Report
SF	Standard Form (Form)
SFOR 6	Stabilization Forces (6th Rotation)
SFS	Security Forces Squadron
SFUG	Security Features Users' Guide
SHADE	Shared Data Environment
SIA	Systems Interface Agreements
SIDPERS 3	Standard Installation/Division Personnel System III
SME	Subject Matter Expert
SMMP	System Manpower and Personnel Integration (MANPRINT) Management Plan

ACRONYM	DEFINITION
SMTP	Simple Mail Transfer Protocol
SOP	Standard Operating Procedure
SQDN	Squadron
SQT	Software Qualification Test
SQTP	Software Qualification Test Plan
SRS	Software Requirements Specification
SSAA	System Security Authorization Agreement
STAMIS	Standard Army Management Information Systems
STANAG	Standard NATO Agreements
STRAP	System Training Plan (Army)
SUN	Shipment Unit Numbers
SUP	Supply Squadron
SUPMIS	Supply-Management Information System
T	**-T-**
T&E	Test and Evaluation
TAMMIS	Theater Army Medical Management Information System
TAV	Total Asset Visibility (see also ITV/TAV)
TBA	To Be Announced
TBD	To Be Determined
TBF	To Be Furnished
TBP	To Be Published
TC-ACCIS	Transportation Coordinator – Automated Command and Control Information System
TC-AIMS	Transportation Coordinators' - Automated Information for Movement System (Marine Corps)
TC-AIMS II	Transportation Coordinators' - Automated Information for Movement System II
TCC	Transportation Component Command
TCMD	Transportation Control & Movement Documents
TCN	Transportation Control Number
TCP-IP	Transmission Control Protocol-Internet Protocol
TDP	Test Design Plan
TDR	Tonnage Distribution Roster
TDY	Temporary Duty

ACRONYM	DEFINITION
TE&C	Test, Evaluation & Certification (PM TIS, TC-AIMS II work group title)
TEMP	Test and Evaluation Master Plan
TEXCOM	US Army Test and Experimentation Command (OBSOLETE TERM: See OTC)
TIC	Technology Integration Center (USA ISEC)
TI&C	Technical Issues and Criteria
TIR	Test Incident Report
TIWG	Test Integration Working Group (obsolete) (now: Test & Evaluation Working-level Integrated Product Team)(See WIPT)
TLDM	Transportation Logistical Data Model
TMO	Transportation Management Office
TPFDD	Time Phased Force Deployment Data
TrAMS	Transportation Automated Measuring System
TRANSCOM	Transportation Command (US)
TRNS	Transportation Squadron
U	**-U-**
UD/MIPS	Unit Diary/Marine Corps Integrated Personnel System
UDAPS(2)	Uniform ADP System
UIC	Unit Identification Codes
ULN	Unit Line Number
UM	Unit Movement
UMO	Unit Movement Officer/Office
UPS	USAREUR Prototype Site
USA	United States Army
USATEC	United States Army Test and Evaluation Command (formerly USAOPTEC)
USAF	United States Air Force
USAISEC	United States Army Information Systems Engineering Command
0	US Army Information Systems Software Development Center –Lee
USAOPTEC	United States Army Operational Test and Evaluation Command (OBSOLETE TERM: See USATEC)
USAOTC	United States Army Operational Test Command
USAREUR	United States Army Europe
USD (A&T)	Under Secretary of Defense (Acquisition and Technology)

ACRONYM	DEFINITION
USMC	United States Marine Corps
USMTF	US Message Text Formats
USN	United States Navy
USTRANSCOM	United States Transportation Command
UTC	Unit Type Code
V	**-V-**
	NONE
W	**-W-**
WIPT	Working-Level Integrated Product Team
WPS	Worldwide Port System
WRS	War Reserve System
X	**-X-**
	NONE
Y-Z	**-Y-Z-**
	NONE

ANNEX C: POINTS OF CONTACT

Name	Organization	Telephone (COMM/DSN)	E-Mail Address
GARRELL, Doug- Director, ILS Division	PM TIS, PEO, EIS	COMM: 703-752-0759 FAX: 703-752-0732 DSN: N/A	Doug.garrell@eis.army.mil
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ANNEX D: USER DISTRIBUTION OPERATION LEVEL HIERARCHY

ARMY:

Block 3 User Distribution Operation Level Hierarchy (Army only may not be applicable to a Joint AOR)

TAS – Theater Address Manager
- SM – Shipment Manager (Usually TMCA/CSG or MCC)
  - MCB – Movement Control Battalion
    - MCE – Movement Control Element
      - BMCE – Branch Movement Control Element
- MBDE – Mode Brigade
  - MBN – Mode Battalion
    - MCo. – Company
      - TTP – Trailer Transfer Point

Role Levels:
View privileges only (outside of the unit hierarchy)
End User
Administrator

TAS - Theater Address Manager: (Usually co-located with the Shipment Manager)
Maintain address information for all DoDAAC's within theater.
Maintain local code table information unique to the theater
Researches/Approves address change or addition requests from lower operations levels.

SM - Shipment Manager: (Senior Movements Control Organization for Corp and/or Theater)
Consumer of data maintained by the theater address manager.
Creates/Documents transportation movement requirements.
Visibility (View only) of data created at lower operations levels.
May have highway regulation authority.

MCB - Movement Control Battalion: (Corp and/or Theater)
Consumer of data maintained by the theater address manager.
Creates/Documents transportation movement requirements.
Visibility (View only) of data created at lower operations levels.
Visibility (View only) of data created (that impacts the MCB) at higher operations levels.
May have highway regulation authority.

MCE - Movement Control Element: (Corp and/or Theater)
Consumer of data maintained by the theater address manager.
Creates/Documents transportation movement requirements.
Visibility (with modification capability) of data created at lower operations levels (BMCE).

Visibility (View only) of data created (that impacts the MCE) at higher operations levels.
May have highway regulation authority.

BMCE - Branch Movement Control Element: (Corp and/or Theater)
Consumer of data maintained by the theater address manager.
Creates/Documents transportation movement requirements.
Visibility (View only) of data created (that impacts the BMCE) at higher operations levels.

MBDE - Mode Brigade: (Corp and/or Theater)
Consumer of data maintained by the theater address manager.
Creates/Documents internal transportation movement requirements.
Assigns movement requirement tasks received from the tasking MCE to subordinate mode units.
Visibility (View only) of data created at lower operations levels.
Visibility (View only) of data created (that impacts the BDE) at other operations levels.
Update transportation movement requirement event information.
May create convoy plans/clearance requests.

MBN – Mode Battalion: (Corp and/or Theater)
Consumer of data maintained by the theater address manager.
Creates/Documents internal transportation movement requirements.
Assigns movement requirement tasks received from the tasking MCE to subordinate mode units.
Visibility (View only) of data created at lower operations levels.
Visibility (View only) of data created (that impacts the BN) at other or higher operations levels.
Update transportation movement requirement event information.
May create convoy plans/clearance requests.

MCo. – Mode Company: (Corp and/or Theater)
Consumer of data maintained by the theater address manager.
Process movement requirement tasks received from higher operations levels.
Visibility (View only) of data created at lower operations levels.
Visibility (View only) of data created (that impacts the CO) at other or higher operations levels.
Update transportation movement requirement event information.
May create convoy plans/clearance requests.

TTP - Trailer Transfer Point: v
Consumer of data maintained by the theater address manager.
Maintain conveyance location information.
Visibility (View only) of data created (that impacts the TTP) at other or higher operations levels.

ATTACHMENT 1 – REQUIREMENTS / TEST CROSSWALK MATRIX

COIs	KPP	CTP	CDD	DT	OT
1. Security Does TC-AIMS II provide and maintain a level of security consistent with current regulations and policies?	KPP 3.c) Verification of compliance with DOD information assurance requirements	System Availability System Non-Availability (Restore System) (Immediate Action) System Non-Availability (Restore System) (Deliberate Action) System Non-Availability (Restore System)	Para 9.1 App F	X	X
2. Performance Can TC-AIMS II support Joint and Service-specific business processes in the areas of movement control, mode operations, and convoy operations for onward movement requirements in a theater of operations (TOPNS) ?	KPP 1 TC-AIMS II must support movement control activities. KPP 2 TC-AIMS II must produce standard forms KPP 3.b) Compliance with applicable GIG Key Interface Parameters (KIPs) KPP3.d) Support integrated architecture products required to assess information exchange and use for a given capability	System Outputs System Outputs Reports System Outputs Standard Forms	Para 1.3.1 Para 6.3 Para 6.3 Table 2 Para 6.3	X	X
3. Interoperability Is TC-AIMS II interoperable with participating Services' current infrastructure and deployed/tactical data networks? In addition, can TC-AIMS II exchange data with appropriate Joint and Service-unique systems?	KPP 3.a) Compliance with the NCOW RM KPP 3.b) Compliance with applicable GIG Key Interface Parameters (KIPs) KPP3.d) Support integrated architecture products required to assess information exchange and use for a given capability	Data Transmission Accuracy Data Input Standardization & Commonality	Para 1.4 App F App F App F	X	X

4. Supportability / Maintainability Is TC-AIMS II supportable, maintainable and trainable during continuous operations, in a variety of environments and configurations?		System Reliability System Operation MTTR Lost Information MTTR	Para 1.4 Para 13.5 Para 13.6 Para 13.3 Para 13.3.2.1 Para 13.3.2.2.2 Para 13.3.2.3 Para 13.3.2.3 Para 13.3.3.2 Para 13.3.3.3	X	X

ATTACHMENT 2 - CRITICAL OPERATIONAL ISSUES AND CRITERIA (COIC)

Issue	Scope	Criteria
Security (COIC: 1) Does TC-AIMS II provide and maintain a level of security consistent with current regulations and policies?	• This issue examines the ability of TC-AIMS II to protect data from unauthorized disclosure and meet the requirements of applicable security policies and directives. • This issue examines the ability of the TC-AIMS II to protect against computer network attacks.	1) TC-AIMS II Block 3 will prevent unauthorized disclosure of data (Ref. MNS, Para 4, and CDD, Appendix F) 2) TC-AIMS II Block 3 will limit a user's access to those areas for which they have been given permission (Ref. MNS, Para 4 and CDD, Appendix F) 3) TC-AIMS II Block 3 will protect data in accordance with the highest classification of data accessible (Ref. CDD, Para 9.1) 4) TC-AIMS II Block 3 will prevent denial of service attacks. (Ref. CDD, Appendix F)
Performance (COIC: 2) Can TC-AIMS II support Joint and Service-specific business processes in the areas of movement control, mode operations, and convoy operations for onward movement requirements in a theater of operations (TOPNS) ?	• This issue examines the ability of TC-AIMS II to schedule, coordinate, and manage transportation services to include tasking military carriers and identifying commercial carrier support requirements. • This issue examines the ability of TC-AIMS II to support driver forecast and asset availability, assignment of movement requirements received from tasking movement control activities, mission planning, creation of driver operations orders, and production of additional documentation to support mission execution. • This issue examines the ability of TC-AIMS II to create and maintain convoy routes, automate convoy de-confliction capabilities, and provide detailed map graphics	1) TC-AIMS II must allow movement control activities to receive, create, and maintain movement requirement data and to schedule, coordinate, and manage transportation services to include tasking military carriers and identifying commercial carrier support requirements. (Ref. CDD, Para 1.3.1) 2) TC-AIMS II must produce standard forms and reports needed to accomplish transportation and functions within timeframes set forth in the CDD. (Ref. CDD, Para 6.3 Table 2.

Issue	Scope	Criteria
Interoperability (COIC: 3) Is TC-AIMS II interoperable with participating Services' current infrastructure and deployed/tactical data networks? In addition, can TC-AIMS II exchange data with appropriate Joint and Service-unique systems?	• This issue examines whether TC-AIMS II is interoperable with the deployable tactical and with the in-place infrastructure at Services posts, camps and stations. • This issue examines the ability of TC-AIMS II to exchange and share data with Joint and Service-unique supply, materiel, and transportation systems as specified in the CDD for the purposes of reducing or eliminating manual data input.	1) TC-AIMS II Block 3 must operate on existing information infrastructure networks, deployable tactical or in a stand-alone mode, for occasions where robust communications are not available (Ref. CDD, Para 1.4) 2) TC-AIMS II Block 3 must accept and export properly formatted data from and to appropriate systems. (Ref. CDD, Appendix F)
Supportability / Maintainability (CIOC: 4) Is TC-AIMS II supportable, maintainable and trainable during continuous operations, in a variety of environments and configurations?	• This issue examines whether TC-AIMS II can operate effectively in-garrison, in a theater of operations, and deployed. • This issue examines whether TC-AIMS II can operate effectively in various configurations to include through the Enterprise Management System, as a client-server, and expeditionary. • This issue examines whether functionally competent users who have had TC-AIMS II Block 3 training, II, can effectively use the application to support RSO&I with the aide of user documentation, multi-media training, and help-desk support. • This issue looks at whether system administrators/database administrators can effectively maintain the system after receiving TC-AIMS II Block 3 System Administration training with the aide of user documentation, multi-media training, and help-desk support. • This issue looks at whether the system can continue to operate during daily/routine maintenance activities such as system backup.	1) TC-AIMS II Block 3 must be operable in-garrison, in a theater of operations, and in deployed environments. (Ref. CDD, Para 1.4) 2) TC-AIMS II Block 3 must operate through the Enterprise Management System, as a client server and in the expeditionary configurations. (Ref. CDD, Para 1.4) 3) TC-AIMS II Block 3 must be able to be operated by trained users with the aide of user documentation, multi-media training, and help-desk support. (Ref. CDD, Para 13.5) 4) TC-AIMS II Block 3 must provide effective training support that addresses operator, system administration and system maintenance training, and that enhances the user's ability to learn and use TC-AIMS II. (Ref. CDD, Para 13.6) 5) Routine system server maintenance will not preclude normal user operations of TC-AIMS II Block 3 (Ref. CDD, Para 13.3.3)

ATTACHMENT 3 – KEY PERFORMANCE PARAMETERS

Key Performance Parameter	Development Threshold	Development Objective
Operational KPP 1 TC-AIMS II must allow movement control activities to receive, create, and maintain designated critical movement requirement data and to schedule, coordinate, and manage critical transportation services to support cult military and commercial movements. (Ref. CDD, Para 1.3.1)	# of successful critical movement control activities by type of activity divided by total number of movement control activities by type is greater than or equal to .85	# of successful critical movement control activities by type of activity divided by total number of movement control activities by type is greater than or equal to .90
Output KPP 2 TC-AIMS II must produce standard forms and reports completed with critical data needed to accomplish transportation and functions. (Ref. CDD, Para 6.3 Table 2.)	# of successful critical standard forms and reports by type divided by total number of standard forms and reports by type is greater than or equal to .95 (NOTE: when operated by target audience user in operating environment and where successful means the activity is both timely and accurate as specified in the CDD.)	# of successful critical standard forms and reports by type divided by total number of standard forms and reports by type is greater than or equal to .975 (NOTE: when operated by target audience user in operating environment and where successful means the activity is both timely and accurate as specified in the CDD.)
Network KPP 3 Net Readiness. a. Compliance with the NCOW RM	a. 100% compliance with common lexicon for NCOW concepts and terminology describing net centricity at the enterprise level and supported by recognizable architectural descriptions provided in the NCOW RM	a. 100% compliance with common lexicon for NCOW concepts and terminology describing net centricity at the enterprise level and supported by recognizable architectural descriptions provided in the NCOW RM
b. Compliance with applicable GIG Key interface profiles (KIPs)	b. 100% of published and applicable Key Interface Parameters (KIP) incorporated as requirements within 12 months of publication through systems evolutionary spiral block process	b. 100% of published and applicable Key Interface Parameters (KIP) incorporated as requirements within 12 months of publication through systems evolutionary spiral block process
c. Verification of compliance with DOD information assurance requirements	c. 100% compliance with the security requirements and evaluation of vulnerabilities for each lifecycle development	c. 100% compliance with the security requirements and evaluation of vulnerabilities for each lifecycle development activity.

d. Support integrated architecture products required to assess information exchange and use for a given capability	activity. d. d. Produce 100% of the required architecture products, using the NCOW RM, including the development of high-level interface information for becoming net ready..	a) d. Produce 100% of the required architecture products, using the NCOW RM, including the development of high-level interface information for becoming net ready.

ATTACHMENT 4 - CTP MATRIX

TEMP ATTACHMENT 3: CRITICAL TECHNICAL PARAMETERS MATRIX				
Specific Performance Requirements	**Required Performance**	**Threshold**	**Objective**	**Notes**
Interoperability				
Interoperability: Data Transmission Accuracy	Interpreted as applicable to all data transmissions on the first attempt	Completeness .90 Accuracy .95	Completeness .95 Accuracy .98	CDD Appendix F
Data Input	The system must accept data, in time frames that support operational mission or task completion, from the external systems listed in Table 1.	Accept properly formatted data from current systems. Completeness .90 Accuracy .95	Interface with additional current and future systems. Completeness .95 Accuracy .98	CDD Appendix F
Interoperability: Standardization & Commonality	TC-AIMS II must comply with applicable provisions contained in the JTA to include DII/COE, minimum level 6 and use DoD standardized information where compatible.	DII/COE Level 6	DII/COE Level 8	CDD Appendix F

TEMP ATTACHMENT 3: CRITICAL TECHNICAL PARAMETERS MATRIX				
Specific Performance Requirements	**Required Performance**	**Threshold**	**Objective**	**Notes**
System Outputs	TC-AIMS II must properly generate reports, forms, OMC data so that: the correct data is placed in appropriate fields, that text is readable by humans, or that bar codes and cards, are readable by appropriate AIT devices	Completeness .90 Accuracy .95	Completeness .95 Accuracy .98	CDD, Para 6.3
System Output Reports	Standard (pre-formatted) reports	Completeness: .95, Accuracy: .95, Speed: Min 1 Page per minute	Completeness: .98, Accuracy: .98, Speed: Min 30 seconds per page	CDD Para: 6..3
System Output Standard Forms	Standard DOD Forms and other paper outputs – I don't think there are any official forms in Block 3.	Completeness: .95, Accuracy: .95, Speed: Min 1 Page per minute	Completeness: .98, Accuracy: .98, Speed: Min 30 seconds per page	CDD, Para 6.3
Reliability, Availability, and Maintainability				

TEMP ATTACHMENT 3: CRITICAL TECHNICAL PARAMETERS MATRIX				
Specific Performance Requirements	**Required Performance**	**Threshold**	**Objective**	**Notes**
System Reliability	TC-AIMS II Block Three must be reliable. It shall have a mean time between operational mission failure (MTBOMF) of 300 hours (threshold), 500 hours (objective) given a 12 hour operation cycle	300 hours MTBOMF	500 hours MTBOMF	NOTE: An operational mission failure is defined as that condition in which the system cannot perform or accomplish the stated mission. Failure can be due to software, hardware, or operator error. CDD, Para 13..3
System Availability	TC-AIMS II must be available	.95 availability	.975 availability	*The system's processing components shall ensure that the overall system availability is not compromised due to run-time process failures.* CDD, Para 13.3.2.1
System Non-Availability (Restore System) (Immediate Action)	Non-Availability will be correctable by simply rebooting the computer or reconnecting to the NIPR net.	Correctable 90% with reboot of eight minutes or less	Correctable 90% with reboot of three minutes or less	CDD Para: 13.3.2.2.2
System Non-Availability (Restore System) (Deliberate Action)	When TC-AIMS II Block 3 non-availability is not correctable by a reboot or reconnect, the TC-AIMS help desk must be able to respond to and correct the problem within two hours 80% of the time.	System Restored within 2 hours 80% of the time	System Restored within 2 hours 85% of the time	CDD, Para 13.3.2.3

TEMP ATTACHMENT 3: CRITICAL TECHNICAL PARAMETERS MATRIX				
Specific Performance Requirements	**Required Performance**	**Threshold**	**Objective**	**Notes**
System Non-Availability (Restore System)	For help desk calls that cannot be successfully corrected within 2 hours, the problem will be corrected	System Restored within 24 hours 95% of the time	System Restored within 24 hours 97% of the time	CDD, Para 13.3.2.3
System Maintainability	TC-AIMS II must be maintainable			
System Operation MTTR	Expeditionary, Mean time to repair (MTTR) at the organizational level (system operation) will be one hour (threshold); 30 minutes (objective).	1 hour to repair	30 minutes to repair	CDD, Para 13.3.3.2
System Operation MTTR	Enterprise, Mean time to repair (MTTR) at the organizational level (system operation) will be one hour (threshold); 30 minutes (objective).	12 hour to repair	8 hours to repair	CDD, Para 13.3.3.2

TEMP ATTACHMENT 3: CRITICAL TECHNICAL PARAMETERS MATRIX				
Specific Performance Requirements	**Required Performance**	**Threshold**	**Objective**	**Notes**
Lost Information MTTR	Mean Time to Repair (MTTR) at the organizational (user) level (lost information) is	3 hours to restore	1 hour to restore	CDD, Para 13.3.3.3